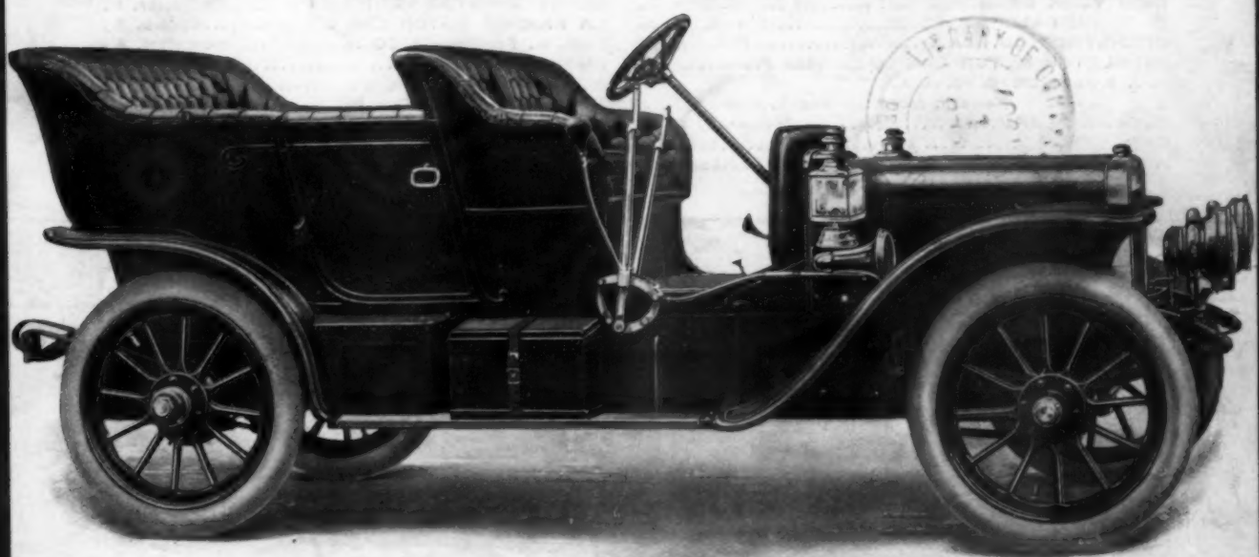
THE AUTOMOBILE

WEEKLY NEW YORK—THURSDAY, JANUARY 31, 1907—CHICAGO 10 CENTS

WINTON



EATS UP THE HILLS

The hill climbing demonstrations of the 40 H.P. Winton Model M at the New York Show (particularly up Viaduct Hill) furnished convincing proof of the wonderful power of this car. OFFSET CYLINDERS and the new WINTON CARBURETER are responsible.

Look them up at the Chicago show, or write us for particulars.

Also investigate the Winton Multiple Disc Clutch and Four Forward Speed Selective Sliding-Gear Transmission—two of the cleverest things in modern automobile construction.

Incidentally, let us suggest that preferred delivery dates are not very numerous now; if you are unwilling to wait a long time for delivery you had better act promptly.

THE WINTON MOTOR CARRIAGE CO., MEMBER A.L.A.M. **CLEVELAND, OHIO, U. S. A.**

BRANCHES IN NEW YORK, BOSTON, PHILADELPHIA, PITTSBURG, CHICAGO AND LONDON

CORBIN

The 1907 Corbin is not the creation of this year alone; it is the cumulative result of our entire experience.

It has been created without regard to cost, but rather to produce only the best in all details of material, workmanship and accessories.

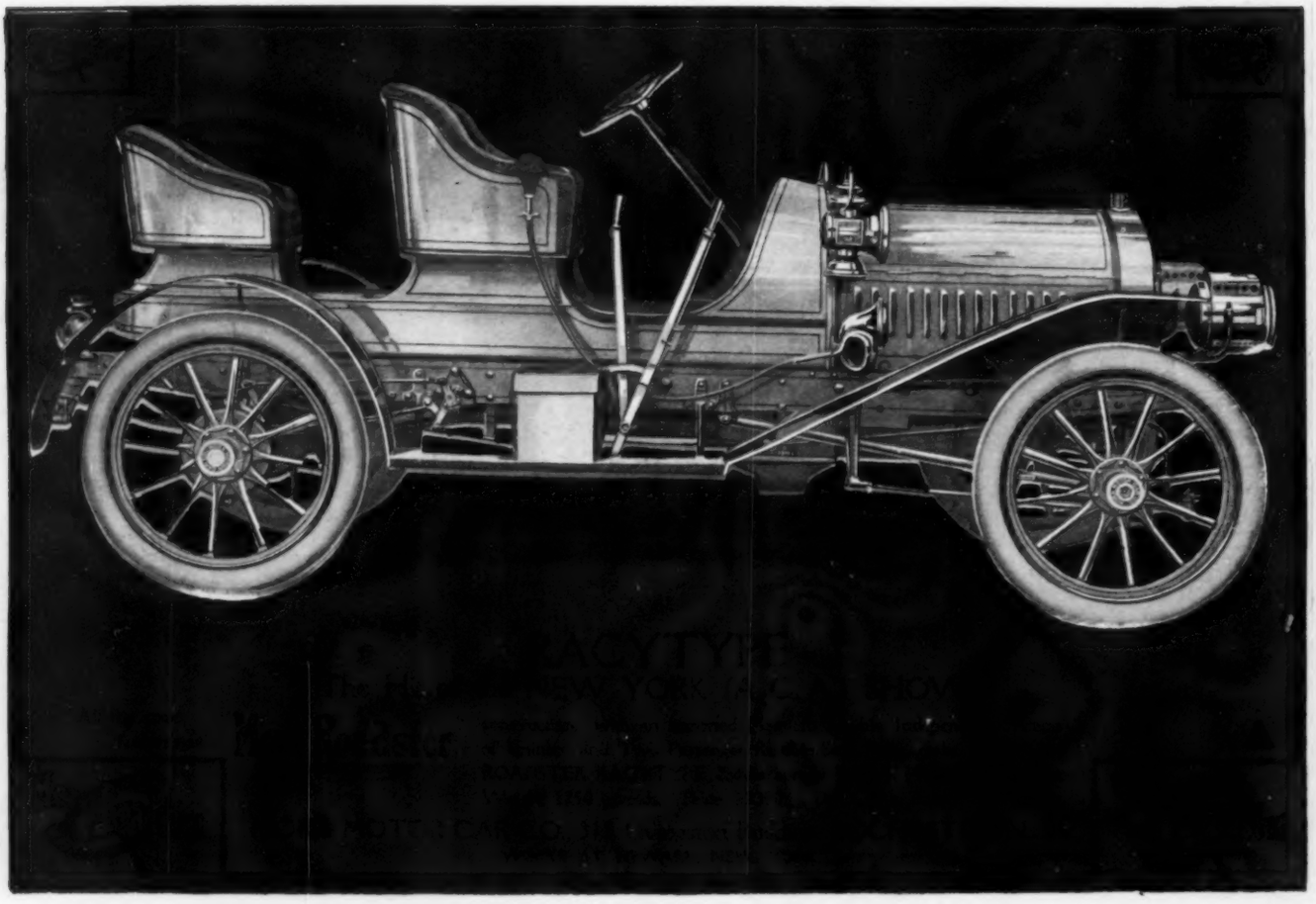
We exhibit in Chicago, Space D-2, Feb. 2-9, 1907

CORBIN MOTOR VEHICLE CORPORATION, New Britain, Conn.

Member Association Licensed Automobile Manufacturers.

AGENCIES.

NEW YORK BRANCH.....244-250 W. 49th St.	GENESEE MOTOR VEHICLE CO.....Rochester, N. Y.
E. T. KIMBALL CO.....Boston, Mass.	LA FRANCE MOTOR CAR CO.....Elmira, N. Y.
BIRD-SYKES CO.....Chicago, Ill.	GEO. H. PHELPS & CO.....Worcester, Mass.
MIDDLETON MOTOR CAR CO.....San Francisco, Cal.	PUGH BROS.....Providence, R. I.
H. J. KOEHLER S. G. CO., Newark, Montclair and E. Orange, N. J.	NORCROSS-CAMERON CO.....Springfield, Mass.
ROBERT PERKINS,.....Rockaway, N. J.	JORDAN AUTOMOBILE CO.....Minneapolis, Minn.
C. R. DENCH.....Erie, Pa.	SOUTH SIDE AUTOMOBILE CO.....St. Louis, Mo.
AUTO REPAIR CO..557-561 Seventh Ave., Pittsburg, Pa.	E. B. WILCOX.....Meriden, Conn.
	BULKLEY AUTO STATION.....Southport, Conn.



THE AUTOMOBILE

VOL. XVI NEW YORK—THURSDAY, JANUARY 31, 1907—CHICAGO No. 5

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THE CHICAGO SHOW: ITS ORIGIN AND GROWTH

Exhibition Opening Saturday Next and Concluding February 9 Will Contain More Car Exhibitors Than Any Preceding

BY S. A. MILES, GENERAL MANAGER NATIONAL ASSOCIATION AUTOMOBILE MANUFACTURERS.

AN attempt to outline the history of the Chicago Show of necessity recalls events which, while now regarded by the victim as an excellent joke, were at the time anything but amusing experiences, and required the exercise of the utmost pertinacity on the part of the promoter in overcoming the difficulties presented in those unsettled pioneer days of the industry.

The first show held in the Windy City was an outdoor affair, conducted at Washington Park, on whose classic track Alexander Winton and other celebrities of the racing world of that day performed wondrous feats, considering the development of the automobile at that time, and others undertook performances on movable platforms and other apparatus, designed to impress the public with the idea that the automobile could climb steeples and turn somersaults in the hands of experienced operators. But for reasons into which it is unnecessary to enter, the show was anything but a success. This event, by the way,

AT NIGHT IN FRONT OF THE BIG COLISEUM DURING THE CHICAGO AUTOMOBILE SHOW WEEK.

ARCH REPRESENTING DIVIDING LINE BETWEEN MAIN SPACES.

had no connection with the later one promoted at the Coliseum, which has become, after seven years of experience, at least as important as any automobile show held in the United States.

In the days of the cycle trade's glory the owners of a number of journals devoted to that sport, and published in Chicago, promoted a number of immensely successful affairs. By the time the cycle craze died, and the automobile had commenced to take its place, these same gentlemen had formed a combination for the publication of a journal devoted to the new form of locomotion, and their experience naturally led them to undertake the promotion of an automobile show. They were troublous times, however, for the field of automobile journalism was necessarily limited, so that, by the time the show plans actually matured, only one member of the combination remained to persevere, through thick and thin—the same individual, by the way, who has conducted the Chicago show ever since, and apparently intends to remain in harness so long as automobile shows endure.

The plans of the promoter of the first Chicago show held at the Coliseum seemed to be progressing with reasonably fair prospects when, during the New York show of the fall of 1900, the National Association of Automobile Manufacturers was formed. One of the first things the executive committee did was to adopt a show resolution, which was practically an instruction to its members to take no part in the Chicago event. The promoter of the show finally succeeded in bringing about a special meeting of the committee, and, by convincing them that Chicago's importance as an industrial center and possible automobile market had been underrated, secured the passage of a new resolution which, however, prescribed that all automobile shows thereafter held must be conducted under the auspices of automobile clubs. The automobile club was a far more important institution in the eyes of the few manufacturers of that day than it is at present.

The management of the first Chicago show practically assured the future success of that event by doing one thing which no one else had previously thought of. Experience with the cycle shows had taught that the man to be appealed to, at that time, was the automobile agent or the person who aspired to become one. Strenuous efforts were therefore made to secure the attendance of men of that class.

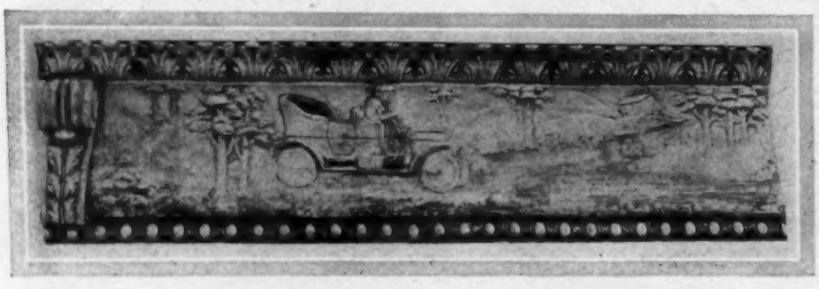
From the standpoint of the promoter the show was anything but a success, but from the standpoint of the exhibitors its success was unqualified. One factory, then producing steam cars, sold more than it was able to produce that season.

For weeks prior to the opening of the show the question with the management was not whether it would be possible to get a large number of exhibitors, but whether it would be possible to beg or to borrow enough cars to make a presentable showing. The huge floor of the Coliseum was encircled by a track about twenty feet wide, and by dint of more or less maneuvering the center was finally fairly well filled with an exhibit which to-day might appear to have been produced by the makers of half a century ago. The dealers were there in force, the public attended in sufficiently large numbers to indicate the growing interest, and, despite the financial loss, the event was voted by the exhibitors who participated to have been a highly successful affair, as the prospects were brilliant.

FIRST REGIMENT ARMORY, WHICH WILL ALSO BE USED FOR THE SHOW.

The mandate of the National Association was obeyed to the letter. The second show was held under the auspices of the Chicago Automobile Club, with which organization the promoter concluded a satisfactory arrangement. It is almost impossible to make a comparison between the first and second shows. The main floor of the Coliseum was well filled, and the financial loss of the previous year became a satisfactory gain. The third, fourth and fifth shows showed steady progress. In the third it became necessary to place makers of parts and accessories in the Annex; in the fourth the gallery was added to the exhibition space by flooring over that portion usually devoted to seating. In the fifth the second floor of the Annex was used, which helped to relieve the congestion.

When the time for allotment arrived last year it became evident that a large number of exhibitors must be denied space or more room must be secured. The demand was so far in excess of the supply that it would have been impossible to give each manufacturer room enough to display even a small part of his exhibit. About a hundred yards from the Coliseum, and divided from it by a public alley, stands the First Regiment



A SECTION OF THE ORNAMENTAL DECORATIVE FRIEZE.

Armory. After a great deal of tribulation and settlement with other organizations who had leased it for the same dates as the automobile show, this building was secured and the space was divided, as fairly as possible, among the eighty exhibitors of cars. The gallery encircling the Armory was given up to accessories. Even with this addition, despite the fact that the total floor space available for exhibits was nearly 80,000 square feet, it was still impossible to take care of every one, or to give any exhibitor as much space as he would have liked, in consequence of which a part of the second floor of the Coliseum Annex, previously sacred to the accessories department, was used for the exhibition of automobiles.

This year there was no room for extension, but a few exhibitors who had been unable to secure space discovered a couple of small balconies and requested to be allowed to exhibit therein. This space has already been allotted.

The public interest has kept pace with the production and demand for space by the manufacturers. Without going into the details of attendance, it may be noted that last year the receipts from all sources were little over 50 per cent. greater than in any earlier year, and that so far as could be gathered not less than one hundred and twenty-five thousand people attended.

The conduct of the Chicago show no longer entails any question about financial returns. An endeavor has been made each year to reduce the cost to the exhibitor. The space rental was reduced in 1906, and has been reduced again for 1907. It is estimated, too, that the plan of uniform decoration resulted last year in a saving to the trade of not less than $50,000.

The efforts of the management are devoted to the presentation of an exhibition which shall be second to none. In the matter of exhibits the attainment of this object is now beyond question. The Chicago show is the first and only national event in which cars of all classes, licensed and unlicensed, are exhibited together. The result is that the number of automobile exhibits is far in excess of that at any other show, the exact number booked for the coming show being 104.

Whether the scheme of decoration and the general setting are equal to those employed at Madison Square Garden is, and must remain, a question to be settled by those people who have an opportunity to see both. Last year opinions were divided. The plans were so entirely different that the question was one merely of taste. The setting at Chicago this year will be chiefly of staff, and therefore somewhat more massive than that at New York. Pictures and statuary will be used to some extent, but in an entirely different way. One feature of the decoration worth attention is that it relates directly to the automobile industry.

The policy of paying particular attention to the dealers has been consistently followed through all of the Chicago shows. The management recognizes the fact that the shows at New York and Chicago are no longer national in the sense that they once were. Time was when dealers were scarce and independent; when they made their annual pilgrimage to the shows for the purpose of placing their orders for the season. That has all passed. Ninety per cent of the dealers now place their orders long in advance. The shows have, therefore, become, to a great extent, local shows. The dealers attend them in just as large numbers as ever, and they attend the Chicago show in greater numbers than any others, bringing with them prospective customers from all parts of the country.

MEDALLION DECORATIVE FEATURE.

To the average New Yorker many of the Western dealers are objects of curiosity. They waste no time. During the week hundreds of them, arriving in Chicago by early trains, make their way to the Coliseum without as much as depositing their baggage at hotels, and make demands for admission to the building as early as 8 o'clock in the morning. Before half of the exhibits have been uncovered many a dealer will have spent a couple of hours quietly inspecting the cars before the rush of the day.

LOCAL SHOW PREPARATIONS IN VARIOUS CITIES.

BUFFALO'S SHOW PROMISES SUCCESS.

BUFFALO, N. Y., Jan. 28.—Indications at this time point to a successful automobile show for Buffalo in Convention Hall, beginning three weeks from to-day. The management is again confronted with the very serious proposition of making room for all who desire exhibition space, and has been again compelled to cut up the two restaurants at the right and left of the main entrance for the purpose of utilizing them for exhibition purposes. This means that the restaurant will be upstairs during the show. Since the first allotment of space on January 10 several applications from automobile manufacturing companies have been received. Secretary D. H. Lewis is doing his best to satisfy every exhibitor at the show. Concerts will be furnished every afternoon and evening by the Sixty-fifth Regiment Band. Much attention will be paid to the decorations. It has been decided to have the color scheme one of green and white, making a garden effect of Italian characteristics.

DATE SET FOR SAN FRANCISCO SHOW.

The week of February 18-25 has been selected for the first automobile show to be held in San Francisco. It will be promoted by the Automobile Dealers' Association, whose headquarters are at 426 Golden Gate avenue. The Golden Gate Park Skating Rink is the building which will be employed to house the show.

GOOD OUTLOOK FOR PITTSBURG SHOW.

PITTSBURG, PA., Jan. 28.—Nearly $30,000 worth of space has already been contracted for at the automobile show to be held at the Duquesne Garden in Pittsburg in April. Offices of the show committee have been opened at the Automobile Dealers' Association, under whose auspices the show will be held, at 5917 Baum street, East End, with John P. McCrea in charge. Advance indications point to one of the most successful automobile events ever held in this country.

WESTERN MAKERS TO EXHIBIT IN BOSTON.

BOSTON, Jan. 29.—Interest will be lent to the power boat section which is to be a more prominent feature of the Boston show this year than ever, by the fact that many of the Western manufacturers who will have elaborate exhibits at the Chicago show to be held March 2-9, will duplicate them at the Hub. Greater efforts than ever are being put forth to make the show as a whole the greatest that New England has ever seen.

CLEVELAND PROMISES A BIG EXHIBIT.

Ten days after the close of the Chicago show, Cleveland will put on its annual event, which will be held in the Central Armory along the same lines as last year, except that more elaborate preparations will be made and a larger exhibit staged. The show will open on February 18 and remain open until the 23d.

WASHINGTON'S AUTO SHOW IS OPEN.

WASHINGTON, D. C., Jan. 28.—Resplendent with a multitude of electric lamps, the Dupont garage on M street was thronged with people to-night to witness the opening of the seventh annual show of the Washington Automobile Dealers' Association. They had the pleasure of seeing the most representative collection of cars ever exhibited in Washington, and they lost no time in making the circuit of the two floors of the garage in order to become acquainted with the 1907 models. Washingtonians are getting automobile wise, a fact that impressed every agent. The latter were not bored with a lot of fool questions, as at previous shows, for even the casual visitor had a good working knowledge of automobile construction, and talked intelligently on the subject.

THE AUTOMOBILE correspondent counted 58 cars on the two floors of the garage, 27 different makers being represented. While the number of cars exhibited is somewhat smaller than last year, more makers are represented than ever before. Brisk sales marked the opening night, and it is quite evident from what was done to-night that the show is going to result in good business. The Capital City seems to be in a buying mood, and the agents have been quick to seize upon the opportunity.

The battle-scarred Thomas racer used by Le Blon in the last Vanderbilt cup race, and a Locomobile racing machine, are two interesting features of the show. Both were towed through the streets of Washington this morning en route from the express company's warehouse to the show room, and they came in for a good share of attention. Washington does not have many opportunities to see big racing machines, and this accounts for the unusual interest evinced in these cars. The exhibitors are as follows:

Pope Automobile Company, of Washington; Commercial Automobile and Supply Company, Wayne; Washington Electric Vehicle and Transportation Company, Columbia; the Cook and Stoddard Company, Pierce Arrow, Franklin, White, Baker, Cadillac; Motor Car Company, Peerless, Stevens-Duryea, Thomas; National Automobile Company, Buick, Studebaker, Oldsmobile; Dupont Garage Company, Waltham-Orient; Geo. P. Sacks, Rambler, Cleveland; Chas. F. Fleming, vehicle clocks; Automobile Tire and Repair Works, tire repairs; Auto Supply and Storage Company, Holsman, Logan; Chas. C. Hughes & Co., Elmore; Carter Motor Car Company, Cartercar; Hamilton Auto Company, Stoddard-Dayton; National Electric Supply Company, tires, lamps, etc.; C. W. Hamilton, American Mercedes; Rudolph, West & Co., tires, lamps, etc.; Chas. E. Miller & Bro., Reo, Ford, Columbus electric; Electric Storage Battery Company, Exide batteries; Pennsylvania Rubber Company, tires; F. N. Cycle Company, F. N. motorcycles; J. R. Thomas, Maxwell.

BALTIMORE SHOW CLOSES ITS DOORS.

BALTIMORE, Jan. 26.—After drawing big and enthusiastic crowds to the Lyric for six successive nights the lights were turned out this evening on the second annual automobile show of Maryland, and the exhibition unanimously voted a success. Sales on the floor of the hall were not as numerous as they might have been, and as many hoped they would have been. But an automobile show is as much an evangelizing as a selling ground, and the full benefit of the public display is certain to be felt in the shape of a rush of orders during the early spring.

Family interest in the exhibits was a feature of the show; the farmers, too, who are popularly supposed to nurse a respectable amount of antipathy to automobiles, showed themselves interested in those types of machines likely to prove of use for their particular class of work. The cinematograph exhibition, with its realistic scenes from the Vanderbilt Cup race, and other automobile events always kept captive a crowd. Local opinion is in favor of holding the show on an earlier date, the beginning of December being put forth as a suitable time.

The accessory men held both sides of the hall, the main floor being occupied by the exhibitors of cars.

MECHANICAL BRANCH A. L. A. M. TO MEET.

In order to extend the scope of observation that was open to the members of the Mechanical Branch of the Association of Licensed Automobile Manufacturers at the show held by the latter in the Garden, it has been decided to hold a meeting during the Chicago Show. This will take place on February 6, at the Chicago Athletic Club, the chief object being to give the engineers an opportunity to inspect the cars of the exhibitors at Chicago who are not members of the association, as well as to compare them with those that are, as in a great many instances they will be shown side by side. The subjects to be considered will be shock absorbers and carbureters, clutches and springs, and in accordance with the plan adopted for the first time at the January meeting in this city, it has been decided to invite representatives of the leading makers of such parts. Judging from the results attendant upon the latter it is anticipated that considerable of interest will be brought to light, as the manufacturers are given an opportunity to put forth their side of a subject with which they are thoroughly familiar.

COMMITTEE'S REPORT ON THE GARDEN SHOW.

On Friday last, the Show Committee of the Association of Licensed Automobile Manufacturers met in this city to consider the results of the show recently held in the Garden, and formulate plans, based on these results, for the show next year. According to the statement of the press agent, orders to the extent of $3,000,000 were placed during the week, of which $937,000 were for imported cars. The records of the committee showed that the attendance for the week was 125,000. On Tuesday, which was one of the worst days of the week considering the weather, the attendance was 20 per cent. greater than for the corresponding day of the year previous despite the doubled admission fee. High water-mark was reached on Wednesday, with an attendance of 21,000. The Show Committee is of the opinion that it will be necessary to increase the general admission to $1, and make this $2 on one or two days of the week. Plans are already under way to increase the floor space of the Garden by an additional 15,000 to 20,000 square feet. One of the most noticeable features of the show was the decreased necessity for demonstrations to make sales, and it is thought that in the near future the matter of demonstrations will be done away with altogether.

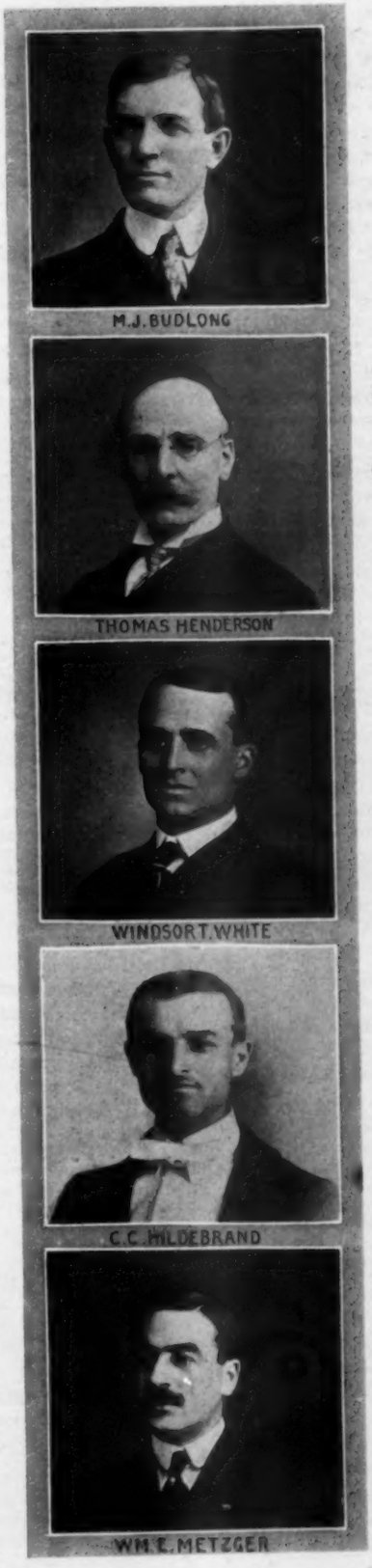
MARYLAND AUTOISTS HAVE GRIEVANCES.

BALTIMORE, MD., Jan. 28.—Strained relations between the automobilists of this city and the police, owing to the activity of the latter in enforcing the twelve-miles-an-hour speed limit, have caused the Automobilists' Protective Association of Maryland to issue an address to the public. In it they point out the injustice and absurdity of the law, and claim that the only restrictions the State can reasonably impose upon the drivers of automobilists are those which tend to conserve the safety of the public. The police, in an effort to put a stop to reckless driving of automobiles by a comparative few, have undertaken to enforce the existing law without regard to the evident purpose for which it was intended, and in such a manner that it is no longer possible for any automobilist, no matter how considerate he may be, to use the streets of Baltimore without constant dread of being arrested for some technical or trivial violation of the law which in no way endangers the safety of the public.

The association is also having trouble with the police over the law compelling drivers of automobiles to sound their horns or sirens at all street crossings. Arrests for neglect of this rule have been numerous, and finally the Protective Association has decided to test the law. President Osborne I. Yellott contends that there is a defect in the present automobile laws of Maryland, in that the section pertaining to the sounding of horns applies to the counties only, and not to the cities.

ORIGIN AND RISE OF THE N. A. A. M.

THOUGH but little more than six years have elapsed since either shows or organizations of automobile manufacturers came into existence, the early history of both is surrounded with more or less of a haze—so much so that few outside of those who actually participated in the small beginnings that have grown so vastly can state to a certainty whether a trade organization was responsible for the first show or vice versa. But this doubt can at once be set at rest when it is recalled that during the holding of the first show in Madison Square Garden a call was issued to "manufacturers of motor vehicle supplies and accessories" to come together and formulate plans for an association "to advance and protect the interests of the trade, procure lower freight rates, more equitable legislation, protest against the adverse and unjust ruling of the Treasury Department, hold shows and exhibitions and give attention to such other matters as required attention." These are not the exact words, though they represent more than an expression of the substance of that first notice.



Press Room, Scene of First Meeting.

In response to this call a number of manufacturers of cars and parts, and dealers in accessories assembled in the press room of the Garden on November 10, 1900. John Brisben Walker was appointed temporary chairman, and Ralph Estep temporary secretary. The organization committee consisted of S. T. Davis, Jr., Charles E. Miller, A. L. Riker, W. C. Baker, E. P. Wells, John Brisben Walker, Charles E. Duryea, J. M. Hill, Alexander Winton, C. J. Field and A. S. Winslow. By a resolution this organization committee was continued as the executive committee of the association. The chief business at this first meeting was naturally the matter of completing the organization, and to this end a committee to draft a constitution and by-laws was appointed by the chair. It was composed of A. L. Riker, Charles E. Duryea, Charles E. Miller, A. L. Winslow and E. P. Wells. At the same time the chair appointed a committee to take in hand the matter of legislation, which, even at that early day, gave promise of proving a vexatious problem. This consisted of Colonel Albert Pope, A. L. Barber, John H. Flagler, S. T. Davis, Jr., and Alexander Winton. The purposes and aims of the association were drawn up in the form of resolutions to which all intending members subscribed. Taken in the light of present-day knowledge, the list is one that mutely expresses a great deal of the history of the development of the automobile in this country. To those who are familiar with what has intervened it speaks for itself. The companies or concerns who were present individually or sent representatives and who signed the resolutions, were as follows: The Mobile Company, Joseph Dixon Crucible Company, B. F. Goodrich Company, Charles E. Miller, Crescent Auto Manufacturing Company, The Steam Mobile Company, C. J. Downing, Goodyear Tire and Rubber Company, Winton Motor Carriage Company, Haynes-Apperson Auto Company, Locomobile Company of America, Duryea Power Company, Overman Auto Company, International Motor Car Company, Upton Machine Company, Munger Vehicle Car Company, Veeder Manufacturing Company, Gray & Davis, New York Motor Vehicle Company, Peerless Manufacturing Company, Motsinger Device Manufacturing Company, St. Louis Motor Car Manufacturing Company, Waltham Manufacturing Company, Baker Motor Vehicle Company, De Dion Bouton Motorette Company, Riker Motor Vehicle Company, Electric Vehicle Company, Knox Automobile Company, Baldwin Cycle Chain Company, and the following publications: the *American Automobile*, the *Motor Vehicle Review*, the *Cycle and Automobile Trade Journal* and the *Motor Age*.

Charter Members Still Prominent.

Considered from any point of view, such an array of interests would have formed an imposing list of charter members for any association representing an entirely new industry to begin existence with, but when taken in the light of the development of the automobile at that day, the showing is truly remarkable and reveals the demand for co-operation that must have existed.

The foresight of the organizers of the association as shown by many of the names of this original list of members, is not only justified by the remarkable development of the industry as a whole in the intervening years, but the prominence to which many of them have attained in that time. Some of the names have changed, and more have dropped out of sight altogether, but the great majority of them have always formed the foundation of the industry as well as its representative association where the builders of cars have been concerned, as well as providing a nucleus for the formation of an association of accessory makers and dealers which has since come into existence as an offshoot from the original organization.

A second meeting was held at 11 Broadway, New York, on December 7, 1900, and at this the following officers were elected: President, S. T. Davis, Jr.; first vice-president, J. H. Flagler; second vice-president, J. Wesley Allison; third vice-president, C. J. Field; secretary, E. P. Wells, and treasurer, David Walker. It was decided that the executive committee should consist of fifteen members, divided into groups of five to serve for one, two and three years respectively. The follow-

ing were elected to serve one year: S. T. Davis, Jr., Henry F. Bradbury, A. S. Winslow, Charles E. Duryea, C. B. Frayer; to serve two years, J. M. Hill, A. L. Riker, W. C. Baker, J. H. Valentine, Henry H. Flagler; to serve three years, J. B. Walker, C. J. Field, E. P. Wells, J. Wesley Allison, and Alexander Winton.

Not a little of the history of the growth and development of the automobile industry as a whole is discernible by merely running over the list showing the names of the officers of the association that succeeded each other year after year. This is particularly true of the first years of the organization's existence, when its very name was synonymous with the American automobile industry at large. For instance, at the second annual meeting for the election of officers, which was held at the office of the Locomobile Company of America, at 7 East Forty-second street, S. T. Davis, Jr., was elected president; A. L. Riker, first vice-president; C. J. Field, second vice-president, and D. E. Rianhard, third vice-president; E. P. Wells, secretary and Percy Owen, treasurer.

At the third annual meeting, which was held at the same address, on February 4, 1903, the following were elected: M. J. Budlong, president; H. Ward Leonard, first vice-president; Windsor T. White, second vice-president; Charles Clifton, third vice-president; Percy Owen, treasurer, and Harry Unwin, secretary. The fourth annual meeting was held at the Madison Square Garden during the course of the fourth annual show on January 23, 1904. It resulted in the reelection of M. J. Budlong as president; first vice-president, Windsor T. White; second vice-president, Charles Clifton; third vice-president, E. H. Cutler; treasurer, W. R. Innes, and secretary Harry Unwin. The fifth annual meeting was held at the Hotel Victoria in New York on January 18, 1905, at which the entire set of officers of the year before was unanimously reelected.

What the Association Has Accomplished.

It would be difficult to give a comprehensive review of all that has been accomplished in the past six years as the result of the coöperation of some of the most prominent manufacturers in the early days from which the national association grew. Within two years after its formal organization at the first automobile show in the Garden in this city, it lent its support to the holding of an annual show in Chicago, which has grown and flourished no less than its forerunner, as have also the shows held in smaller cities. On this account the association has been largely identified in the public mind with the matter of shows, though a vast amount of equally important work has been carried on that does not reach the public ear. For instance, four years ago a standard warranty was established and adopted, and though it has frequently been a matter for discussion, it has not been changed in any way during that time. Most of the makers print this guarantee in their catalogue, and a great many who are not members of the association have adopted it. At first sight this may appear to have been merely a measure of self-protection, and of no particular interest apart from that, nor of any far-reaching significance, but it is one of the things that reflects the moral influence that the National Association of Automobile Manufacturers has constantly wielded over the industry as a whole. Bearing in mind the rapid rise and decline of the industry that immediately preceded—the making of bicycles—every effort has been directed to avoid any tendency toward over-inflation; the boom idea has been consistently and persistently frowned down, and the members urged not to attempt to make a greater number of cars than they could make well, and in this manner the growth of the industry has been natural and on sound financial lines—a fact that is reflected in the standing of those makers who are members of the association.

Besides this, the association has interested itself in everything pertaining to the advancement of the industry generally, as well as of the interests of its members, and be it said to its credit, the latter have not been allowed to overshadow the general good. It has always taken an active interest in legislation in any way concerning the autoist, and its policy in this respect has been consistent, in that it has exerted every effort to prevent meddling with laws that were reasonably acceptable, as well as to block the passage of unreasonable legislation in any form. Its interest has gone further than this. With the firm belief that most of the automobile legislation is based upon fundamentally wrong principles, it has instituted an action to test the constitutionality of State licenses, and has already carried it through several of the lower courts of New Jersey. It will be taken, in due course, to the Supreme Court of the United States, and even though the contention of the association be decided against, the matter of a single State license being sufficient anywhere in the country will have been passed upon at the same time, as this is also being contended for. During 1905 it lent financial aid to the proposed free alcohol legislation. In the matter of good roads also, the association has always been very active, and a great deal of benefit has resulted, and will continue to come from the work that is constantly being carried on with the improvement of the highways in all parts of the country in view. Instances of the good work that has been carried on by the association might be multiplied indefinitely, and through it all may be seen the beneficent influence that such an organization, when well managed, may wield for the good of the industry it represents.

COURT PRONOUNCES ON FOREIGN REPAIRS.

WASHINGTON, D. C., Jan. 28.—The United States Circuit Court of Appeals for the second circuit has rendered a decision favorable, in part, to the importer, in the case of J. T. B. Hillhouse *v.* United States. The case came before the court upon appeal from a decision of the Circuit Court for the Southern District of New York, affirming a decision of the Board of General Appraisers, which sustained the Collector of Customs at New York in assessing duty upon an automobile of foreign manufacture under the tariff act of 1897. An automobile owned by Mr. Hillhouse was used abroad more than one year, and was subjected to extensive repairs shortly before importation. The court held that so much of the machine as was a new manufacture (new parts, reupholstering, etc.) was dutiable, but that the rest, including the cost of overhauling, oiling, cleaning, readjusting and regulating, was free of duty under paragraph 504, as household effects used abroad more than one year.

SCHROEDER'S "DIXIE" TO COMPETE ABROAD.

Commodore Edward J. Schroeder, of the Motor Boat Club of America, has challenged last year's winner of the Harmsworth trophy, which means that the *Dixie* will compete in the international contest the coming summer. The *Dixie* is the star boat in this week's races at Palm Beach, Fla., where she outclasses all rivals in point of size and speed.

The Motor Boat Club of America has just been advised of the fact that the British race will, in all probability, be held during the first fortnight in August and the course will be inside the Isle of Wight. The course last year was a triangular one just inside Southampton waters and the same will, in all probability, be adopted for the race this year.

WHY WAGNER CARRIED AN ARSENAL.

After fourteen days in New York, Louis Wagner, the Vanderbilt victor, last week returned to his native land on *La Gascogne*. A little adventure on the eve of sailing almost caused Wagner to miss his passage. Held up by a New York policeman for speeding, the Frenchman was discovered on being searched at the police station to be the possessor of a revolver and a big knife. His explanation of the presence of the forbidden arms was that he had bought the revolver to protect a large sum of money he was carrying back to France, and the knife was one he regularly used to rip off punctured tires. Evidently the explanation satisfied the authorities, for the case was dismissed and Wagner was able to sail as he had intended.

LOCATIONS OF THE CHICAGO EXHIBITORS

ALTHOUGH such seldom appears to be the case to the casual observer, systematic arrangement and order are the keynote of every automobile show. It may look at first sight as if the exhibits were hopelessly jumbled and as if confusion reigned supreme, the only way of locating a certain exhibitor being to go on a blind hunt in the hope of stumbling across his location by dint of luck and perseverance, and generally this is the plan followed by the average seeker after information of this nature. And confusion is worse confounded when he calls others to his aid, for the query, "Where is Blank's stand?" either brings no information or much that is misleading. For this reason the appended classified list of exhibitors will be found valuable.

AMERICAN GASOLINE PLEASURE VEHICLES

Adams Co.....First Regt. Armory, Main Floor A3
Aerocar Co.....First Regt. Armory, Main Floor D4
American Loco Auto Co.....First Regt. Armory, Main Floor A4
American Motor Car Co.....Coliseum Annex, 2d Floor 128 and 135
Apperson Bros. Auto Co.....Coliseum, Main Floor E3
Auburn Auto Co.....Coliseum Annex, Main Floor B2
Austin Auto Co.....First Regt. Armory, Main Floor E4
Autocar Co.....Coliseum, Main Floor B2
Bartholomew Co.....Coliseum Annex, Main Floor O1
Blomstrom Motor Co., C. H.....Coliseum Annex, Q1
Biddle-Murray Mfg. Co.....First Regt. Armory, Main Floor G5
Bowman Automobile Co.....First Regt. Armory, Main Floor G4
Buckeye Mfg. Co.....First Regt. Armory, Main Floor E5
Buick Motor Car Co.....First Regt. Armory, Main Floor A1
Cadillac Motor Car Co.....Coliseum, Main Floor B4
Cleveland Motor Car Co.....Coliseum Annex, Main Floor Q3
Corbin Motor Vehicle Corp.....Coliseum, Main Floor D2
Daimler Mfg. Co.....Coliseum, Main Floor G1
Dayton Motor Car Co.....Coliseum, Main Floor H1
Deere-Clark Motor Car Co....Col. Annex, 2d Floor 125, 136, 137, 138
Dolson Automobile Co.....First Regt. Armory, Main Floor B2
Dorris Motor Car Co.....First Regt. Armory, Main Floor E8
DeLuxe Motor Car Co..Col. Annex, 2d Floor 127, 128, 129, 134, 135, 136
Dragon Automobile Co.....First Regt. Armory, Main Floor F1
Duryea Power Co.....Coliseum, Main Floor F2
Electric Vehicle Co.....Coliseum, Main Floor F3
Elmore Mfg. Co.....Coliseum, Main Floor D5
Evansville Auto Co.....First Regt. Armory, Main Floor E2
Forest City Motor Car Co.....Coliseum Annex, P1
Franklin Mfg. Co., H. H.....Coliseum, Main Floor B1
Grout Bros. Automobile Co.....Coliseum Annex, Main Floor O2
Harrison Wagon Works.....Coliseum Annex, Q4
Haynes Automobile Co.....Coliseum, Main Floor D3
Holsman Automobile Co.....Coliseum Annex, Main Floor L1
Jackson Automobile Co.....First Regt. Armory, Main Floor B3
Jeffery, Thos. B., & Co.....Coliseum, Main Floor E2
Kissell Motor Car Co.....First Regt. Armory, Main Floor E6
Kline Co., The.....Coliseum Annex, 2d Floor 129, 134
Knox Automobile Co.....Coliseum, Main Floor F5
Knight & Kilbourne.....First Regt. Armory, Main Floor B1
Lear Automobile Co., Oscar.....First Regt. Armory, Main Floor C1
Locomobile Co. of America.....Coliseum, Main Floor C1
Logan Construction Co.....First Regt. Armory, Main Floor E7
Lozier Motor Co.....Coliseum Annex, Main Floor J1
Matheson Motor Car Co.....Coliseum, Main Floor C5
Marvel Motor Car Co.....Coliseum Annex, 2d Floor, 127, 136
Maxwell-Briscoe Motor Co.....Coliseum, Main Floor C3
Maumee Motor Car Works.....Coliseum Annex, Main Floor T1
Mitchell Motor Co.....Coliseum Annex, Main Floor K1
Mercedes Import Co.....First Regt. Armory, Main Floor O3
Meteor Auto Works.....Coliseum Annex, Main Floor Q1
Moline Auto Co.....First Regt. Armory, Main Floor G8
Monarch Motor Car Co.....First Regt. Armory, Main Floor E3
Motor Car Co.....First Regt. Armory, Main Floor G1
Moon Motor Car Co.....First Regt. Armory, Main Floor D3
National Motor Vehicle Co.....Coliseum, Main Floor F1
Nordyke & Marmon Co.....First Regiment Armory, Main Floor D4
Northern Motor Car Co.....Coliseum, Main Floor F2
Olds Motor Works.....Coliseum, Main Floor B1
Packard Motor Car Co.....Coliseum, Main Floor C4
Palais de l'Automobile.....First Regt. Armory, Main Floor F2
Peerless Motor Car Co.....Coliseum, Main Floor D4
Pierce Co., Geo. N.....Coliseum, Main Floor B6
Pierce Engine Co.....First Regt. Armory, Main Floor G3
Pope Manufacturing Co.....Coliseum, Main Floor G2
Pope Motor Car Co.....Coliseum, Main Floor E1
Premier Motor Mfg. Co.....Coliseum, Main Floor C2
Rainier Co.....First Regt. Armory, Main Floor C2
Rapid Motor Vehicle Co.....First Regt. Armory, Main Floor C4
Reo Motor Car Co.....Coliseum Annex, Main Floor M1
Reliable Dayton Mfg. Co.....Coliseum Annex, 2d Floor 148, 149
Royal Motor Car Co.....Coliseum, Main Floor E3
Simplex Motor Car Co.....First Regt. Armory, Main Floor D7
Smith & Mabley Mfg. Co.....First Regt. Armory, Main Floor C3
Smith & Mabley, Inc.....First Regt. Armory, Main Floor C3
Star Auto Co.....First Regt. Armory, Main Floor G9
Stearns Co., F. B.....Coliseum, Main Floor D6
Soules Motor Car Co.....First Regt. Armory, Main Floor G6
Stevens-Duryea Co.....Coliseum, Main Floor A4
Studebaker Automobile Co.....Coliseum, Main Floor A1
St. Louis Motor Car Co.....Coliseum, Main Floor F6
Thomas Motor Co., E. R.....Coliseum, Main Floor C6
Triumph Motor Car Co.....Coliseum Annex, 2d Floor 142
Tileston & Co., C. A.....First Regt. Armory, Main Floor F2
Waltham Mfg. Co.....Coliseum, Main Floor A5
Wayne Automobile Co.....Coliseum, Main Floor A2
Wayne Works.....First Regt. Armory, Main Floor G2
Welch Motor Car Co.....Coliseum Annex, Main Floor N1
Western Tool Works.....First Regt. Armory, Main Floor E1
White Sewing Machine Co.....Coliseum, Main Floor F7
Winton Motor Carriage Co.....Coliseum, Main Floor A3
Woods Motor Vehicle Co.....Coliseum, Main Floor H2

AMERICAN ELECTRIC PLEASURE VEHICLES

Babcock Electric Carriage Co.....Coliseum, Main Floor B5
Baker Motor Vehicle Co.....Coliseum, Main Floor A6
Columbus Buggy Co.....Coliseum Annex, Main Floor Q2
Electric Vehicle Co.....Coliseum, Main Floor F3
Pope Motor Car Co.....Coliseum, Main Floor E1
Rauch & Lang Carriage Co.....First Regt. Armory, Main Floor A2
Studebaker Automobile Co.....Coliseum, Main Floor A1
Woods Motor Vehicle Co. .....Coliseum, Main Floor H2

THE TIRE MAKERS

Continental Caoutchouc Co.....First Regt. Armory, Gallery 38
Diamond Rubber Co.....Coliseum, Gallery 21
Electric Rubber Mfg. Co.....First Regt. Armory, Gallery 4
Firestone Tire & Rubber Co.....Coliseum, Gallery 68
Fisk Rubber Co.....Coliseum, Gallery 38, 39
Goodrich Co., B. F.....Coliseum, Gallery 47, 48
Goodyear Tire & Rubber Co.....Coliseum, Gallery 44, 45
G & J Tire Co.....Coliseum, Gallery 59, 60
Hartford Rubber Works Co.....Coliseum, Gallery 36, 37
International Rubber Co.....Coliseum, Gallery 31, 32
Michelin Tire & Supply Co.....First Regt. Armory, Gallery 1, 2
Morgan & Wright.....Coliseum, Gallery 26, 27
Pennsylvania Rubber Co.....Coliseum, Gallery 18
Republic Rubber Co.....Coliseum, Gallery 5
Swinehart Clincher Tire & Rubber Co.....Coliseum, Gallery 54

ACETYLENE GAS LIGHTING TANKS

Avery Portable Lighting Co.....Coliseum Annex, 2d Floor 114
Prest-O-Lite Co.....Coliseum, Gallery 61

BATTERIES

Chicago Battery Co.....Coliseum, Gallery 19
Hensel Battery & Mfg. Co.....First Regt. Armory, Gallery 29
National Carbon Co.....Coliseum, Gallery 73
National Sales Corp.....First Regt. Armory, Gallery 30, 31
Vesta Accumulator Co.....First Regt. Armory, Gallery 5, 6
Witherbee Igniter Co.....First Regt. Armory, Gallery 9

BEARINGS

Hess-Bright Mfg. Co.....Coliseum Annex, 2d Floor 119, 120, 121
Hyatt Roller Bearing Co.....Coliseum, Gallery 22
Steel Ball Co.....Coliseum, Gallery 13
Timken Roller Bearing Axle Co.....Coliseum, Gallery 49

BODIES AND TOPS

Chicago Coach & Carriage Co.....Coliseum Annex, 2d Floor 145, 146
London Auto Supply Co.....Coliseum Annex, 2d Floor 93, 94, 111
Rands Mfg. Co.....Coliseum Annex, 2d Floor 86, 87, 88
Sprague Umbrella Co.....Coliseum, Gallery 2, 3, 4
Staver Carriage Co.....Coliseum Annex, 2d Floor 143

CARBURETERS

Byrne, Kingston & Co.....Coliseum, Gallery 75, 76
National Sales Corporation.....First Regt. Armory, Gallery 30, 31
Wheeler, F. H.....Coliseum Annex, 2d Floor 109

CASTINGS

Cramp & Sons' Ship & Engine Building Co., Wm.,
Coliseum Annex, 2d Floor 95

CHAINS

Baldwin Chain Mfg. Co.....Coliseum, Gallery 50
Diamond Chain Mfg. Co.....Coliseum, Gallery 55
Whitney Mfg. Co.....Coliseum, Gallery 23

COILS

Byrne, Kingston & Co.....Coliseum, Gallery 75, 76
Splitdorf, C. F.....Coliseum, Gallery 30

DEALERS AND MANUFACTURERS OF GENERAL ACCESSORIES

Adapt Machinery Co.....First Regt. Armory, Gallery 10
Arnstein, Eugene.....First Regt. Armory, Gallery 23, 24
Auto Accessories Mfg. Co.,
First Regt. Armory, Gallery 13, 14, 15, 16, 17, 18
Auto Supply Co.....First Regt. Armory, Gallery 19, 20, 21
Beckley Ralston Co.....First Regt. Armory, Gallery 34, 35, 36
Excelsior Supply Co.....First Regt. Armory, Gallery 39
Post & Lester.....First Regt. Armory, Gallery 22

GEARS, AXLES, DIFFERENTIALS, PARTS, ETC.

Brown-Lipe Gear Co.....Coliseum, Gallery 51
Cramp, Wm., & Sons, Ship & Engine Bldg Co.,
Coliseum Annex, 2d Floor 95
Detroit Motor Car Supply Co.....Coliseum, Gallery 77, 78, 79
Gemmer Engine Co.....Coliseum Annex, 2d Floor 97
Hartford Auto Parts Co.....Coliseum Annex, 2d Floor 116
Muncie Auto Parts Co.....Coliseum, Gallery 69
Spicer Universal Joint Mfg. Co.....Coliseum, Gallery 52
Warner Gear Co.....Coliseum, Gallery 57

HORNS, SIGNALS, ETC.

Gabriel Horn Mfg. Co.....Coliseum, Gallery 12

LAMPS

Badger Brass Mfg. Co.....Coliseum, Gallery 40, 41
Dietz Co., R. E.....Coliseum, Gallery 33
Edmunds & Jones Mfg. Co.....Coliseum, Gallery 72
Gray & Davis.....Coliseum, Gallery 43, 44
Imperial Brass Mfg. Co.....Coliseum Annex, 2d Floor 110
Rose Mfg. Co.....Coliseum, Gallery 46
Rushmore Dynamo Works.....First Regt. Armory, Gallery 28
Standard Lamp & Mfg. Co.....First Regt. Armory, Gallery 7

LUBRICATING OILS AND GREASES

Dixon Crucible Co., Jos.....Coliseum Annex, 2d Floor 84
Harris Oil Co., A. W.....Coliseum, Gallery 58
N. Y. & N. J. Lubricant Co.....Coliseum, Gallery 62
Robinson & Sons' Co., W. C.....Coliseum Annex, 2d Floor 112

MAGNETOS AND DYNAMOS

Dayton Electrical Mfg. Co.....Coliseum, Gallery 28
Motsinger Device Mfg. Co.....Coliseum, Gallery 24
Remy Electric Co.....Coliseum, Gallery 66
Splitdorf, C. F.....Coliseum, Gallery 30

NON-SKIDS, TIRE COVERS, ETC.

Weed Chain Tire Grip Co.....Coliseum, Gallery 10

TOOLS, JACKS, ETC.

Cook's Railway Appliance Co.....Coliseum, Gallery 70

PUMPS, TANKS, OILERS, ETC.

Bowser & Co., Inc., S. F.....Coliseum, Gallery 7, 8, 9
Detroit Lubricator Co.....Coliseum Annex, 2d Floor 98
Hancock Mfg. Co.....Coliseum Annex, 2d Floor 82
Imperial Brass Mfg. Co.....Coliseum Annex, 2d Floor 110
McCord & Co.....Coliseum, Gallery 34
Moline Pump Co.....Coliseum Annex, 2d Floor 151
National Oil Pump & Tank Co.....First Regt. Armory, Gallery 11
Wray Pump & Register Co.....Coliseum, Gallery 15

RADIATORS, BONNETS, FENDERS, ETC.

Kinsey Manufacturing Co.....Coliseum Annex, 2d Floor 115
Long Manufacturing Co.....Coliseum, Gallery 53

RIMS, WHEELS, ETC.

Cullman Wheel Co.....First Regt. Armory, Gallery 27
Midgley Mfg. Co.....Coliseum, Gallery 35
Schwartz Wheel Co.....Coliseum, Gallery 65
Turner & Fish Co.....Coliseum Annex, 2d Floor 83

SHOCK ABSORBERS

Diezemann Shock Absorber Co.....Coliseum, Gallery 1
Hartford Suspension Co.....Coliseum, Gallery 74
Kilgore Air Cushion Co.....Coliseum Annex, 2d Floor 113
Sager, J. H.....Coliseum Annex, 2d Floor 96

SPEEDOMETERS

Jones, J. W.....Coliseum, Gallery 29
Jones, W. S.....Coliseum Annex, 2d Floor 118
Lipman Mfg. Co.....Coliseum Annex, 2d Floor 81
Oliver Instrument Co.....Coliseum Annex, 2d Floor 117
Post & Lester.....First Regt. Armory, Gallery 22
Smith Mfg. Co., R. H.....Coliseum Annex, 2d Floor 85
Veeder Mfg. Co.....Coliseum, Gallery 42
Warner Instrument Co.....Coliseum, Gallery 63
Webb Mfg. Co.....Coliseum, Gallery 56
Winchester Speedometer Co.....Coliseum, Gallery 6

STEEL, STEEL TUBING, ETC.

American & British Mfg. Co..Coliseum Annex, 2d Floor 106, 107, 108
Bethlehem Steel Co.....Col. Annex, 2d Floor 101, 102, 103, 104, 105
Prosser & Son, Thos.....First Regt. Armory, Gallery 26
Shelby Steel Tube Co.....Coliseum, Gallery 25
Western Malleable Steel Co.....Coliseum Annex, 2d Floor 80

TIMERS, PLUGS, AMMETERS, ETC.

Atwater Kent Mfg. Co.....Coliseum Annex, 2d Floor 89, 90
Byrne, Kingston & Co.....Coliseum, Gallery 75, 76
Splitdorf, C. F.....Coliseum, Gallery 30

MOTOR CYCLES AND PARTS

Aurora Automatic Machinery Co.....Coliseum, Gallery 16
Consolidated Mfg. Co.....Coliseum Annex, 2d Floor 99, 100
Fowler-Manson-Sherman Cycle Mfg. Co....Col. Annex, 2d Floor 147
Harley-Davidson Motor Co.....Coliseum Annex, 2d Floor 124, 139
Hendee Mfg. Co.....Coliseum Annex, 2d Floor 122, 141
Reading Standard Cycle Mfg. Co..Coliseum Annex, 2d Floor 123, 140

MISCELLANEOUS EXHIBITS

Acetyvone Co., Carbide.....First Regt. Armory, Gallery 3
Chicago School of Motoring.....First Regt. Armory, Gallery 32, 33
Chicago Pneumatic Tool Co....Col. Annex, 2d Floor 130, 131, 132, 133
Motor & Accessory Mfrs.....Coliseum, Gallery 14, 17
Coliseum Annex, 2d Floor 91, 92
Pantasote Co., Leathers.....Coliseum, Gallery 64
Kessler, W. S.....Coliseum Annex, 2d Floor 150
Tilt, C. A.....Coliseum Annex, 2d Floor 144
Valentine & Co., Varnishes.....Coliseum, Gallery 11

THE AMERICAN AUTOMOBILE

DOUBTLESS there are few, even though closely connected with the industry—in fact, a part of it—and cognizant on that account of all that happens concerning it, who appreciate the vast strides it has been making, or realize on what a solid foundation this growth is based. There is presented, in tabular form in the following pages, for the first time in the history of the industry, a résumé of the cars, the annual output of which, mounting into the thousands, goes to swell the vast total that has served to place America in the front rank, where the number of cars in use is concerned, despite the fact that she was among the last of the principal manufacturing nations of the globe to consider the automobile seriously, and when she did take it up, persistently barked up the wrong tree for some time. An attempt has been made to present in tabular form for easy reference, a list of all the cars made in this country, grading them according to their selling price alone, so that, taken as a whole, the table may be said to be representative of the American automobile. It is not contended that the list is as complete as it can possibly be made; doubtless, there may be some makers who have been in business for some time who have been inadvertently overlooked, while in other cases, cars that are listed have ceased to be factors, except in the hands of those few purchasers.

An analysis of its most salient features shows better than anything else can the trend of things in the automobile field, as well as revealing in a manner little short of marvelous the great expansion it has undergone in the past year or two. The first page of the table brings to light in no uncertain manner the fact that while the "poor man's automobile" may not be a reality as yet, it is not because there is no one bending an effort toward that goal. The extent of the list of cars of all types that are now made to sell at less than $1,000 must come as a surprise to those who have always regarded the automobile solely as the perquisite of great wealth. And this must be further intensified by the even greater showing of cars made to sell between $1,000 and $2,000, while going a little further reveals the fact that probably more automobiles of the modern, high-powered type are listed at $2,500 than at any other single figure. More than this, it shows that the efforts of American manufacturers are not confined to catering to any one class where style or power is concerned; cars are being turned out in large quantities at low figures, but, on the other hand, the American maker has also soared, and automobiles made in this country are now to be had at prices as high as any demanded abroad. In the field of the electric pleasure vehicle, and of the commercial vehicle, both of the electric and gasoline-driven types, the great expansion that is constantly taking place is equally plain.

PRINCIPAL DETAILS OF AMERICAN CARS FOR 1907

Car	Price	Power	No. Cyls.	Seats	Clutch	Change Speed Gear	Drive	Wheel Base	Weight	Tires
Success	$250	3	1	2	Planetary	.....	Chain	.....	.....	41 & 44 x ⅞
Paragon	375	5	2	2	.....	Planetary	Shaft	58″	550	28 x 2½
Jewell	400	8	1	2	.....	Planetary	Chain	60″	700	32 x 2
Dorchester	400	4	1	2	.....	.....	Chain	.....	400	28 x 2
Orient	400	4	1	2	Friction	.....	Chain	80″	750	26 x 2½
Palmer	400	9	1	2	Cable	.....	.....	.....	.....	36 x 2
Postal	450	12	2	2	.....	.....	.....	72″	.....	.....
Orient	475	4	1	2	Friction	.....	Chain	73″	650	26 x 2½
Federal	475	12	2	2	Friction	.....	Chain	.....	650	36 x 1½
Brush	500	6	1	2	.....	Planetary	Rope	.....	800	42 & 44 x 1½
Reliable—Dayton	500	12	2	2	.....	Planetary	D. Chain	.....	700	40 & 44 x 1½
Orient	525	4	1	4	Friction	.....	Chain	77″	750	26 x 2½
Okey	550	7	2	2	.....	Planetary	Shaft	76″	1,300	30 x 3½
Ford	600	15	4	2	.....	Planetary	Shaft	84″	1,000	30 x 3
Gale	600	10	2	2	.....	Planetary	Chain	73″	1,150	28 x 3
Walker	600	10	2	2	.....	Planetary	Shaft	78″	.....	28 x 3
Farmer's	600	10	2	4	.....	Planetary	Chain	90″	.....	44 x 1½
Monarch	600	14	2	2	.....	Planetary	Shaft	78″	1,000	28 x 3
Oldsmobile	650	7	1	2	.....	Planetary	Chain	72″	1,000	28 x 3
Holsman	650	10	2	4	.....	.....	Rope	75″	850	44 & 48 x 1½
Beebe	650	12	2	2	.....	Planetary	Chain	80″	.....	36 x 1½
Reo	675	8	1	4	.....	Planetary	Chain	.....	.....	28 x 3
Holsman	700	10	2	2	.....	.....	Rope	75″	850	44 & 48 x 1½
Page	750	14	2	2	.....	.....	Shaft	84″	.....	28 x 3
Cadillac	800	10	1	2	.....	Planetary	Chain	.....	.....	30 x 3
Holsman	800	10	2	4	.....	.....	Rope	.....	900	44 & 48 x 1½
Crown	800	12	2	2	.....	Planetary	Shaft	76″	1,000	28 x 3
Marvel	800	14	2	2	Cone	Planetary	Shaft	84″	1,300	30 x 3
Maxwell	825	14	2	2	.....	Planetary	Shaft	72″	1,150	.....

PRINCIPAL DETAILS OF AMERICAN CARS—Continued

Car	Price	Power	No. Cyls.	Seats	Clutch	Change Speed Gear	Drive	Wheel Base	Weight	Tires
Stanley	850	10	Ste'm	2	.....	.....	Gear....	90"	1,100	30 x 3
Cadillac	950	10	1	4	.....	Planetary..	Chain...	76"	.....	30 x 3½
Rambler	950	14	2	2	.....	Planetary..	Chain...	90"	1,500	30 x 3½
Hewitt	1,000	10	1	4	Planetary....	.....	Chain...	72"	1,200	30 x 3½
Leader	1,000	18	2	5	Planetary....	.....	Chain...	84"	1,675	30 x 3½
Logan	1,000	10	2	2	Con. Band...	.....	Chain...	86"	1,600	32 x 3½
Buick	1,150	22	2	2	Cone.....	Planetary..	.....	89"	1,750	30 x 3½
Autocar	1,200	14	2	3	Disc.....	Sliding....	Shaft....	81"	1,500	30 x 3
Cameron	1,200	.....	4	4	Cone.....	Sliding....	Shaft....	96"	.....	30 x 3½
La Salle Niagara	1,250	18	2	4	.....	Planetary..	Shaft....	90"	1,600	30 x 3½
Auburn	1,250	24	2	4	.....	Planetary..	Chain...	100"	.....	32 x 3½
Model	1,250	24	2	4	Cone.....	P'n or Sl'..	Chain...	100"	1,600	34 x 3½
Waltham	1,250	16	4	2	Cone.....	Sliding....	Shaft....	82"	1,800	30 x 3½
Jackson	1,250	24	2	4	Cone	Planetary..	Chain....	90"	1,750	30 x 3½
Reliance	1,250	22	2	5	Cone	Sliding....	Shaft....	.....	.....	.....
Chalfant	1,250	22	2	5	.....	Planetary..	Chain...	90"	.....	30 x 3½
Duryea	1,250	15	3	4	.....	Planetary..	Chain...	75"	1,050	30x3 & 36x3
Moline	1,250	18	2	5	.....	Planetary..	Chain...	92"	.....	30 x 3½
Beebe	1,250	20	2	5	.....	Sliding....	D. Chain	100"	.....	30 x 3½
Reo	1,250	20	2	4	.....	Planetary..	Chain...	94"	1,850	30 x 3½
Rambler	1,250	22	2	2	.....	Planetary..	Chain...	100"	2,000	30 x 4
Gale	1,325	20	2	5	.....	Planetary..	Chain...	92"	1,750	30 x 3½
Cartercar	1,350	20	2	4	Friction.....	.....	.....	94"	1,600	32 x 3 & 3½
Rambler	1,350	22	2	5	.....	Planetary..	Chain...	100"	2,000	30 x 4
Maxwell	1,375	20	2	2	.....	Planetary..	Shaft....	.....	1,600	.....
Eagle	1,400	24	4	5	.....	Planetary..	.....	110"	1,400	.....
Torbensen	1,400	18	2	4	.....	Planetary..	Chain...	86"	.....	.....
Compound	1,400	16	3	5	Cone.....	Sliding....	Shaft....	84"	1,400	28 x 3½
Maxwell	1,450	20	2	4	.....	Planetary..	Shaft....	86"	1,700	30 x 3½
Oxford	1,500	19	2	5	Friction.....	Select.....	Shaft....	90"	1,800	.....
Stanley	1,500	20	Ste'm	5	.....	.....	Gear....	100"	1,700	34 x 3½
Merkel	1,500	16	4	2	Cone.....	Sliding....	Shaft....	86"	1,450	32 x 3
Jackson	1,500	24	2	4	Disc.....	Planetary..	Shaft....	100"	1,900	32 x 3½
Logan	1,500	20	2	5	Expanding...	.....	Shaft....	86"	1,600	32 x 3½
Duryea	1,500	18	3	5	.....	Planetary..	Chain...	80"	1,200	36 x 3½
Detroit	1,500	22	2	5	Cone.....	Select.....	Shaft....	96"	1,800	32 x 3½
Trebert	1,600	30	4	5	Disc.....	Sliding....	Shaft....	103"	2,800	34 x 4
Compound	1,600	16	3	5	Cone.....	Sliding....	Shaft....	96"	1,650	28 x 3½
Mitchell	1,600	20	4	5	Cone.....	Sliding....	Shaft....	90"	1,600	.....
Mora	1,650	24	4	4	Cone.....	Sliding....	Shaft....	98"	1,700	32 x 3½
Northern	1,700	20	2	5	.....	Planetary..	Shaft....	106"	2,100	32 x 3½
Stoddard-Dayton	1,750	18	4	2	Cone.....	Sliding....	Shaft....	88"	1,400	30 x 3½
Waltham	1,750	20	4	5	Cone.....	Sliding....	Shaft....	96"	1,800	32 x 3½
Elmore	1,750	24	3	5	.....	Sliding....	Shaft....	102"	1,750	30 x 3½
Pope-Tribune	1,750	20	4	2	Cone.....	Sliding....	Shaft....	95"	1,600	32 x 3½
Kansas City	.....	25	2	4	.....	Planetary..	Chain...	.....	.....	30 x 3½
Mitchell	1,800	24	4	5	Cone.....	Sliding....	Shaft....	100"	2,200	32 x 4
Dolson	1,800	.....	4	5	Disc.....	Sliding....	Shaft....	108"	.....	.....
Pullman—Runabout	1,800	20	4	2	Cone.....	Sliding....	Shaft....	92"	1,755	30 x 3½
Compound	1,800	20	3	5	Cone.....	Sliding....	Shaft....	92"	1,600	.....
Klink	1,850	35	4	5	.....	Select.....	Shaft....	108"	.....	.....
Riviera	1,850	20	2	5	.....	Planetary..	Shaft....	106"	.....	32 x 4
Kisselkar	1,850	30	4	5	Cone.....	Sliding....	Shaft....	98"	.....	32 x 4
Franklin	1,850	12	4	4	Disc.....	Sliding....	Shaft....	90"	1,450	30 x 3 & 3½
Pullman	1,900	20	4	5	Cone.....	Sliding....	Shaft....	92"	1,755	30 x 3½
Adams-Farwell	2,000	.....	3	2	.....	Planetary..	Chain...	.....	.....	.....
Mitchell	2,000	35	4	5	Cone.....	Sliding....	Shaft....	108"	2,300	32 x 4
Moline	2,000	24	4	5	Cone.....	Sliding....	Shaft....	100"	2,050	32 x 3½
Marion	2,000	22	4	5	Cone.....	Sliding....	Shaft....	100"	1,825	32 x 3½
Pungs-Finch	2,000	30	4	5	Disc.....	Sliding....	Shaft....	110"	1,600	32 x 3½
Mora	2,000	24	4	5	Cone.....	Sliding....	Shaft....	103"	1,900	32 x 4
Crawford	2,000	.....	4	.....	Disc.....	.....	D. Chain	106"	.....	.....

PRINCIPAL DETAILS OF AMERICAN CARS—Continued

Car	Price	Power	No. Cyls.	Seats	Clutch	Change Speed Gear	Drive	Wheel Base	Weight	Tires
Dragon	2,000	26	4	.....	Cone	Sliding	Shaft	104"	1,800	32 x 3½
Lambert	2,000	40	4	5	Friction	.....	Shaft	105"	1,900	32 x 3½
Buick	2,000	30	2	5	Disc	Plane'ry	Shaft	106½"	1,800	32 x 4
Dolson	2,000	32	4	5	Disc	Sliding	Shaft	108"	.....	.....
Waltham	2,100	20	4	5	Cone	Sliding	Shaft	96"	1,850	32 x 3½
Glide	2,100	36	4	5	Disc	Sliding	Shaft	103"	2,250	32 x 4
La Salle Niagara	2,250	30	4	5	.....	Sliding	Shaft	100"	1,800	32 x 3½
Iroquois	2,250	30	4	5	Expansion	Sliding	Shaft	96"	.....	30 x 3½
Premier	2,250	24	4	5	Disc	Sliding	Shaft	110"	2,100	.....
Queen	2,250	28	4	5	Disc	Select	Shaft	100"	2,000	32 x 4
Crown	2,250	24	4	5	.....	Plane'ry	Shaft	99"	2,000	32 x 3½
Riviera	2,250	28	4	5	Cone	Sliding	Shaft	106"	.....	32 x 4
Compound	2,250	20	3	5	.....	.....	.....	102"	1,750	.....
Dorris—Runabout	2,350	30	4	2	Disc	Select	Shaft	102"	2,200	32 x 4
White	2,400	20	Ste'm	2	.....	.....	Shaft	102"	.....	34 x 4
Chicago	2,500	25	Ste'm	5	.....	.....	Shaft	114"	2,400	34 x 4
Corbin	2,500	24	4	5	Cone	Select	Shaft	108"	2,200	34 x 3½ & 4
White	2,500	20	Ste'm	5	.....	.....	Shaft	104"	.....	34 x 4
Cadillac	2,500	30	4	5	Disc	Plane'ry	Shaft	102"	.....	32 x 4
Stevens-Duryea	2,500	20	4	5	Disc	Sliding	Shaft	90"	1,850	30 x 3½
Winton	2,500	30	4	5	Ind. Clutch	.....	Shaft	104"	2,200	34 x 4
Kansas City	.....	30	4	5	.....	Sliding	Shaft	90"	.....	32 x 4
Haynes	2,500	30	4	5	Con. Band	Select	Shaft	102"	2,250	32 x 4
Jackson	2,500	45	4	5	Disc	Sliding	Shaft	108"	2,400	34 x 4
Knox	2,500	30	4	5	Cone	Select	Shaft	102"	2,250	32 x 4
Chadwick	.....	30	4	5	Cone	Sliding	D. Chain	108½"	2,500	34 x 4½
Grout	2,500	35	4	5	Cone	Sliding	Chain	108"	2,600	32 x 4
Dorris	2,500	30	4	5	Disc	Select	Shaft	102"	2,300	32 x 4
Smith	2,500	24	4	5	Disc	Sliding	Shaft	107"	2,100	34 x 4
Moline	2,500	35	4	5	Cone	Sliding	Shaft	110"	.....	34 x 4
Hammer	2,500	24	4	5	.....	Plane'ry	Shaft	98"	1,750	32 x 4
Lambert	2,500	40	4	5	Friction	.....	D. Chain	106"	2,500	32 x 4
Pungs-Finch	2,500	35	4	5	Disc	Sliding	Shaft	.....	.....	32 x 3½
Logan	2,500	30	4	5	.....	Sliding	Shaft	108"	3,750	32 x 4
Marmon	2,500	24	4	5	D. Cone	Plane'ry	Shaft	96"	2,150	32 x 4
St. Louis	2,500	35	4	5	Disc	Sliding	Shaft	108"	2,400	32 x 4
Wayne	2,500	35	4	5	Expansion	Sliding	Shaft	106"	2,400	34 x 3½ & 4
Dolson	2,500	40	4	5	Disc	Sliding	Shaft	111"	2,400	34 x 4
Lane	2,500	20	Ste'm	5	.....	.....	Shaft	97"	2,300	32 x 4
Glide	2,500	36	4	5	Disc	Sliding	Shaft	120"	2,500	34 x 4
Stoddard-Dayton	2,500	35	4	5	Cone	Select	Shaft	105"	2,500	34 x 4
Iroquois	2,500	40	4	5	Expansion	Sliding	Shaft	100"	.....	34 x 4
Johnson	2,500	30	Ste'm	5	Jaw	.....	Shaft	112"	2,800	34 x 4
Rambler	2,500	35	4	5	Cone	Sliding	D. Chain	112"	2,900	34 x 4
Adams-Farwell	2,500	.....	3	4	.....	Plane'ry	Chain	.....	.....	.....
Deere	2,500	30	4	5	Disc	Sliding	Shaft	110"	2,500	34 x 3½ & 4
Hewitt—Town Car	2,600	10	1	5	Disc	Plane'ry	Chain	84"	1,800	760 x 90 765 x 105
Pierce-Racine	2,600	40	4	5	Cone	Shaft	Shaft	106"	.....	34 x 4½
Atlas	2,600	30	2	5	Cone	Sliding	Shaft	102"	.....	.....
Thomas "Forty"	2,750	40	4	5	Cone	Select	Shaft	112"	2,500	32 x 4
Pope-Hartford	2,750	30	4	5	Cone	Sliding	Shaft	102"	2,400	32 x 4
Oldsmobile	2,750	40	4	5	Cone	Select	Shaft	106½"	2,500	34 x 3½ & 4
Aerocar	2,750	40	4	5	Disc	Sliding	Shaft	.....	2,700	.....
Franklin	2,800	20	4	5	Disc	Sliding	Shaft	105"	1,900	34 x 3 & 3½
Locomobile	2,800	20	4	5	Cone	Sliding	Chain	96"	1,900	32 x 4
Pennsylvania	2,800	35	4	5	Cone	Sliding	Shaft	111"	2,550	34 x 4
Ross	2,800	25	Ste'm	5	.....	.....	Shaft	108"	2,600	34 x 4
Ford	2,800	40	6	5	.....	Plane'ry	Shaft	120"	2,600	34 x 4
Triumph	2,800	30	4	5	Disc	Sliding	Shaft	108"	2,200	36 x 3½ & 4
Adams-Farwell	3,000	.....	5	.....	D. Sliding	.....	Gear	.....	.....	.....
Autocar	3,000	30	4	5	Disc	Sliding	Shaft	112"	2,500	32 x 4
Columbia	3,000	28	4	5	Cone	Sliding	Shaft	109"	2,350	32 x 3½ & 4
Lambert	3,000	40	4	5	Friction	.....	D. Chain	106"	2,700	32 x 4
St. Louis	3,000	50	4	5	Disc	Sliding	Shaft	116"	2,600	34 x 4½
Maxwell	3,000	40	4	7	Disc	Sliding	Shaft	104"	2,500	34 x 4
Conover	3,000	40	4	5	Cone	Select	Shaft	104"	2,400	34 x 4
Iroquois	3,000	40	4	7	Cone	Sliding	Shaft	100"	2,450	32 x 4½
Upton	3,000	40	4	5	Disc	Select	Shaft	109"	.....	34 x 4½
Pullman	3,000	40	4	5	Cone	Select	Shaft	110"	.....	34 x 4 & 4½
Halliday	3,000	40	4	7	Cone	Sliding	Shaft	110"	.....	.....

PRINCIPAL DETAILS OF AMERICAN CARS—Continued

Car	Price	Power	No. Cyls.	Seats	Clutch	Change Speed Gear	Drive	Wheel Base	Weight	Tires
Simplicity	3,000	40	4	5	Friction	.....	D. Chain	105″	.....	34 x 4
National	3,000	40	4	5	Cone	Sliding	Shaft	104″	.....	32 x 4
Studebaker	3,200	32	4	5	.....	Sliding	Shaft	104″	.....	34 x 4
Dolson	3,250	60	4	7	Disc	Sliding	Shaft	123″	3,000	31 x 4½
American—Roadster	3,250	40	4	5	Cone	Sliding	Shaft	106″	2,300	36 x 3½ & 4
White	3,400	30	Ste'm	2	.....	.....	Shaft	115″	.....	36 x 4 & 5
Lane	3,400	30	Ste'm	5	.....	.....	Shaft	112″	2,700	36 x 4
Haynes	3,500	50	4	7	Con. Band	Select	Shaft	110″	2,950	34 x 4½
White	3,500	30	Ste'm	5	.....	.....	Shaft	115″	.....	36 x 4 & 5
Winton	3,500	40	4	7	Disc	Select	Shaft	112″	.....	34 x 4½
Northern	3,500	50	4	7	Com. Air	Sliding	Shaft	119″	3,300	34 x 4½
Berkshire	3,500	35	4	5	Ind. Clutch	.....	Shaft	118″	2,800	36 x 3½ & 4½
Marmon	3,500	35	4	5	Disc	Sliding	Shaft	104″	2,850	34 x 4 & 4½
Cleveland	3,500	35	4	5	Cone	Sliding	Shaft	104″	2,300	34 x 4
Wayne	3,500	50	4	7	Cone	Sliding	Shaft	117″	2,800	34 x 4½
Merkel	3,500	40	4	5	Cone	Sliding	Shaft	110″	2,800	34 x 4
National	3,500	50	4	5	Cone	Sliding	Shaft	112″	2,650	34 x 4½
B-L-M	3,500	24	4	5	Cone	Sliding	Shaft	98″	1,300	32 x 3½
Glide	3,500	50	4	5	Disc	Sliding	Shaft	132″	3,000	36 x 4½
Sovereign	.....	40	4	8	.....	Select	D. Chain	120″	.....	36 x 4 & 5
Moon	3,500	35	4	5	Disc	Sliding	Shaft	110″	2,600	34 x 3½ & 4½
Silent Knight	3,500	40	4	5	.....	Sliding	Shaft	112″	2,600	34 x 4
Frontenac	3,500	40	4	5	.....	Sliding	Shaft	112″	2,600	34 x 4½
Gaeth	3,500	50	4	7	Band	Sliding	Shaft	112″	3,000	34 x 4 & 4½
Sturtevant	3,500	35	4	2	Automatic	.....	Shaft	98″	1,800	32 x 3½
Stevens-Duryea	3,500	35	6	5	Disc	Sliding	Shaft	114″	2,300	34 x 4
Model	3,600	50	4	7	.....	Sliding	Shaft	.....	.....	.....
White	3,700	30	Ste'm	7	.....	.....	Shaft	115″	.....	34 x 4 & 5
Compound	3,750	40	6	5	Cone	Sliding	Shaft	115″	2,500	.....
Studebaker	4,000	35	4	5	Cone	Sliding	Shaft	104″	2,500	34 x 4 & 4½
Thomas	4,000	60	4	7	Disc	Select	D. Chain	118″	3,200	36 x 4 & 5
Peerless	4,000	30	4	5	Int'l Exp'd'g	Select	Shaft	109″	2,800	34 x 4 & 4½
Frayer-Miller—Runabout	4,000	36	6	2	Int'l Exp'd'g	Sliding	Shaft	122″	2,500	36 x 4½
Franklin	4,000	30	6	7	Disc	Sliding	Shaft	127″	2,400	36 x 3½ & 4
Cleveland—Limousine	4,000	35	4	7	Cone	Sliding	Shaft	104″	2,800	34 x 4
Adams-Farwell	4,000	45	5	5	D. Sliding	.....	Gear	108″	2,400	34 x 4½
Royal-Touring	4,000	45	4	7	Cone	Sliding	Shaft	114″	.....	34 x 4½
Studebaker	4,000	30	4	7	Cone	Sliding	Shaft	104″	.....	34 x 4
Acme	4,000	50	4	7	.....	.....	.....	115½″	2,600	34 x 4
Knox	4,000	40	4	7	Cone	Select	D. Chain	112″	2,800	34 x 4½
Woods	4,000	40	4	5	.....	.....	.....	120″	3,000	36 x 4½
Craig-Toledo	4,000	40	4	7	Disc	Sliding	Shaft	112″	2,550	36 x 3½ & 4
Pierce Great Arrow	4,000	30	4	5	.....	Sliding	Shaft	112″	2,900	34 x 4 & 4½
Frayer-Miller	4,000	50	4	7	Expansion	Sliding	Shaft	122″	2,750	36 x 4½
Cleveland	4,000	35	4	7	Cone	Sliding	Shaft	124″	2,140	34 x 4 & 4½
Welch	4,200	50	4	7	Ind. Clutch	.....	Shaft	129″	3,000	36 x 5
Apperson	4,200	45	4	7	Com. Band	Select	D. Chain	116″	2,900	34 x 4 & 4½
Packard	4,200	30	4	5	Cone	Sliding	Shaft	112″	2,900	34 x 3½ & 4
Rainier	4,250	35	4	5	Cone	Sliding	Shaft	104″	4,250	34 x 4
Matheson	4,250	35	4	3	Disc	Select	D. Chain	117″	3,200	36 x 4 & 4½
Pope-Toledo	4,250	50	4	7	Disc	Select	D. Chain	115″	2,900	36 x 3½ & 4½
White—Limousine	4,500	30	Ste'm	7	.....	.....	Shaft	115″	.....	34 x 4 & 5
Matheson	4,500	35	4	7	Disc	Select	D. Chain	117″	3,400	36 x 4 & 4½
Thomas	4,500	60	4	7	Disc	Select	D. Chain	118″	3,500	36 x 4 & 5
Columbia	4,500	45	4	7	Cone	Select	D. Chain	117″	3,400	36 x 4 & 4½
Stearns	4,500	60	4	5	Int'l Exp'd'g	Select	D. Chain	120″	3,200	36 x 4 & 4½
Austin	4,500	60	4	8	Disc	Select	D. Chain	116″	3,300	36 x 4 & 5
Simplicity—Limousine	4,500	40	4	7	.....	Friction	D. Chain	105″	2,500	34 x 4
White—Pullman-Limousine	4,700	30	Ste'm	7	.....	.....	Shaft	115″	.....	34 x 4 & 5
Apperson	4,750	55	4	7	Com. Band	Select	D. Chain	116″	3,000	36 x 4 & 4½
De Luxe	4,750	60	4	7	Cone	Sliding	Shaft	121″	3,000	36 x 3½ & 4½
Stearns—Pullman	4,750	60	4	7	Int'l Exp'd'g	Select	D. Chain	120″	3,200	36 x 4 & 4½
Studebaker—Limousine	5,000	35	4	7	Cone	Sliding	Shaft	104″	.....	34 x 4
Locomobile	5,000	35	4	5	Cone	Sliding	D. Chain	106″	2,900	34 x 4½
Matheson—Runabout	5,000	50	4	3	Disc	Select	D. Chain	123″	3,250	36 x 4 & 5
Thomas—Limousine	5,000	60	4	7	Disc	Select	D. Chain	118″	3,800	36 x 4 & 5
Pierce Great Arrow	5,000	45	4	7	.....	Sliding	Shaft	124″	3,400	36 x 4 & 5
Studebaker—Landaulet	5,000	35	4	7	Cone	Sliding	Shaft	104″	.....	34 x 4 & 4½

PRINCIPAL DETAILS OF AMERICAN CARS—Continued

Car	Price	Power	No. Cyls.	Seats	Clutch	Change Speed Gear	Drive	Wheel Base	Weight	Tires
Royal-Tourist Limousine	5,000	45	4	7	Cone	Sliding	Shaft	114″		34 x 4½
Knox—Limousine	5,000	40	4	6	Cone	Select	D. Chain	112″	3,200	34 x 4½
National	5,000	75	6	7	Cone	Sliding	Shaft	127″	3,200	36 x 5
Apperson—Runabout	5,000	50	4	3	Com. Band	Select	D. Chain	100″	1,800	34 x 3½ & 4
Chadwick	5,000	45	4	7	Cone	Sliding	D. Chain	108″	2,850	34 x 4 & 4½
Lozier	5,000	40	4	7	Disc	Select	D. Chain	117″	3,050	36 x 4½ & 5
Lozier—Runabout	5,000	40	4	3	Disc	Select	D. Chain	115″	2,675	36 x 4½ & 5
American Mors	5,000	32	4	7	Cone	Sliding	D. Chain	106″		34 x 5
Sturtevant	5,000	50	4	7	Automatic		Shaft	120″	3,000	34 x 4½
Harrison	5,000	40	4	7	Jaw	Sliding	Shaft	123″	3,000	36 x 4½
Clark	5,000	20	Ste'm		Cone		Shaft	108″	2,800	36 x 4½
Peerless	5,000	45	4	7	Int'l Exp'd'g	Select	Shaft	114″	3,300	34 x 4 & 4½
Moore	5,000	40	4	7		Select				
Thomas—Landaulet	5,200	60	4	7	Disc	Select	D. Chain	118″	3,800	36 x 4 & 5
Matheson	5,500	50	4	7	Disc	Select	D. Chain	123″	3,400	36 x 4 & 5
Packard—Limousine	5,500	30	4	7	Int'l Exp'd'g	Sliding	Shaft	122″	3,300	34 x 4 & 4½
Woods—Victoria	5,500	45	4	7	Cone	Sliding	D. Chain	120″	3,500	36 x 4½
Walter		40	4	7	Disc or Cone	D. Slid'g.	Shaft	124″	3,200	36 x 4 & 5
Walter	5,500	50	4	7	Disc or Cone	D. Slid'g.	Shaft	124″	3,600	36 x 4 & 5
Buick	5,500	60	8	7	Disc	Plane'ry	Shaft	112″		815 x 105
Simplex	5,600	35	4	7	Rev. Cone	Sliding	D. Chain	106″ 111″ 114″	2,300	910 x 90 920 x 120
Simplex—Runabout	5,760	50	4	2	Cone	Select	D. Chain	124″	2,250	915 x 105 935 x 135
Tincher	6,000	50	4	7		Sliding	D. Chain	120″		34 x 4
Lozier—Limousine	6,000	40	4	7	Disc	Select	D. Chain	117″	3,680	36 x 4 & 4½
Stevens-Duryea	6,000	50	6	7	Disc	Sliding	Shaft	122″	3,500	36 x 4 & 5
American Mors	6,000	52	4	7	Cone	Sliding	Chain	120″	3,400	36 x 4 & 5
Welch	6,000	75	4	7	Disc	Ind. Cl'h	Shaft	138″	3,500	36 x 5
Pierce Great Arrow	6,500	65	6	7	Cone	Sliding	Shaft	135″	3,900	36 x 4½ & 5
Matheson—Land't or Lim'sne	6,500	50	4	7	Disc	Select	D. Chain	123″	3,450	36 x 4 & 5
American Mercedes	7,500	45	4	7	Disc	Select	D. Chain	127″		36 x 4½
American Napier	8,000	60	6	7	Cone	Sliding	Shaft	126″	4,000	915 x 105 935 x 135
Berliet	8,500	40	4	7	Cone	Select	D. Chain	126″		36 x 4 &

DETAILS OF AMERICAN ELECTRIC VEHICLES

Car	Price	H.P.	Wheelbase	Weight	Tires	Battery	Mileage
Pope-Waverley—Runabout	$850		60″		30 x 2½ & 3″ Pneumatic	24 Cells	
E. V. Co.—Runabout	900	3.5	68″		30 x 3″ Pneumatic	20 Cells	
Pope-Waverley—Speed Wagon	950		72″		30 x 2½″ & 3″ Pneumatic	24 Cells	
National, Model 50	950	2.5	67″	1,500	30 x 3″ Pneumatic	32 Cells	
National, Model 65	1,000	2.5	67″	1,500	30 x 3″ Pneumatic	32 Cells	
Woods—Runabout	1,000		62″	2,500		20 Cells	
Pope-Waverley—Speed Wagon	1,025		72″		30 x 2½″ & 3″ Pneumatic	30 Cells	
Studebaker—Runabout	1,135		67″	1,650	30 x 3″ Pneumatic	24 Cells	
Pope-Waverley—Physicians'	1,150		72″		30 x 3″ & 3½″ Pneumatic	30 Cells	
Baker Imperial	1,200	1	68″	1,000	30 x 3″ Pneumatic	12 Cells	
National—Runabout	1,200	3	70″	1,600	32 x 3½″ Pneumatic	36 Cells	
Babcock Special	1,250	2.5	72″	1,250	Pneumatic	24 Cells	100
Studebaker—Stanhope	1,275		67″	1,565	Pneumatic	24 Cells	
Pope-Waverley—Stanhope	1,400		70″		30 x 3½″ Pneumatic	30 Cells	
Babcock—Roadster	1,400	2.5	78″	1,500	32 x 3½″ Pneumatic	24 Cells	100
E. V. Co.—Victoria-Phaeton	1,500				Pneumatic	24 Cells	
Columbus—Stanhope	1,600		69″	1,600	30 x 3½″ Pneumatic	24 Cells	40–75
Babcock—Victoria	1,600	2.5	78″	1,550	32 x 3″ Pneumatic	24 Cells	75–100

DETAILS OF AMERICAN ELECTRIC VEHICLES—Continued

Car	Price	H.P.	Wheelbase	Weight	Tires	Battery	Mileage
Babcock—Stanhope	1,650	2.5	63″	1,900	Solid	40 Cells	50
Studebaker—Special Stanhope	1,675	.....	74″	2,250	Pneumatic	36 Cells	.....
Pope-Waverley—Surrey	1,700	.....	90″	.....	30 x 4 Pneumatic″	42 Cells	.....
E. V. Co.'s Surrey	1,700	7	68½″	.....	32 x 3″ Pneumatic	40 cells	.....
Studebaker—Victoria-Phaeton	1,775	.....	68″	2,000	Pneumatic	28 Cells	.....
Rauch & Lang—Stanhope	1,800	2.	67″	1,600	32 x 3½″ Pneumatic	24 Cells	75
Baker—Runabout	1,800	2	76″	1,500	30 x 3″ Pneumatic	24 Cells	80
Lansden—Electrette	1,850	.....	90″	1,850	30 x 3½″ Pneumatic	60 Cells	60
Woods Victoria	1,900	.....	73″	2,600	.....	40 Cells	.....
Columbus—Coupe	1,900	.....	69	1,600	30 x 3½″ Pneumatic	24 Cells	40–75
Rauch & Lang—Coupe	2,000	2	68″	1,750	32 x 3½″ Pneumatic	24 Cells	75
Babcock, Model 3	2,000	2.5	.....	2,200	.....	40 Cells	.....
Baker—Suburban	2,000	2.5	70″	1,750	34 x 3½″ & 4″ Pneumatic	24 Cells	.....
E. V. Co.—Opera Bus	2,000	4	69″	5,330	36″ & 42 x 3½″ Solid	44 Cells	.....
Babcock Model No. 4	2,250	.....	72″	2,500	.....	48 cells	75
Pope-Waverley—Stat'n Wagon	2,250	.....	77½″	.....	30 x 4 Pneumatic	41 Cells	.....
Woods Victoria	2,400	.....	74″	3,000	.....	40 Cells	.....
Woods—Detachable Brougham	2,500	.....	73″	2,600	.....	40 Cells	.....
Columbus Surrey	2,500	.....	89	2,200	34 x 4 Pneumatic	24 Cells	60
Baker—Surrey	2,650	2.5	86½″	2,100	36 x 3½ & 4½″ Pneumatic	24 Cells	.....
Woods—Theatre Bus	2,800	.....	70″	3,200	.....	40 Cells	.....
Woods—R'nd-Front Brougham	2,800	.....	86″	3,200	.....	40 Cells	.....
Studebaker—Surrey	2,985	.....	.....	.....	.....	28 Cells	.....
Columbus—Surrey	3,000	.....	89″	2,400	34 x 4½″ Pneumatic	24 Cells	50
Rauch & Lang—Depot Wagon	3,000	.....	87″	2,500	36 x 4½″ Pneumatic	24 Cells	.....
Woods—Landaulet	3,000	.....	83	3,400	.....	40 Cells	.....
Woods—Extension Landaulet	3,500	.....	96″	3,650	.....	40 Cells	.....
Cantono—Fore Brougham, Extension Straight Front	3,500	5	90″	3,000	2½″ Solid	.....	.....
Baker—Inside-Driven B'gham	3,500	2.5	86½″	2,200	36 x 3½″ & 4½″ Pneumatic	24 Cells	.....
E. V. Co.—Victoria	4,000	.....	.....	.....	Pneumatic	44 Cells	.....
E. V. Co.—Brougham	4,000	.....	.....	.....	Pneumatic	44 Cells	.....
E. V. Co.—Landaulet	4,000	.....	.....	.....	Pneumatic	44 Cells	.....
E. V. Co.—Hansom	4,000	.....	.....	.....	Pneumatic	44 Cells	.....
Lansden, Type 40 CC	4,000	.....	88″	3,500	32 x 4½″ Pneumatic	60 Cells	40

DETAILS OF AMERICAN GASOLINE COMMERCIAL VEHICLES

Car	H.P.	No. Cylinders	Cooling	Transmission	Drive	Tires	Wheelbase	Type	Carrying Capacity
Orient	4	1	Air	Friction	Chain	28 x 3	89″	Delivery	350 lbs.
Winton	40	4	Water	Selective	Shaft	{ 36 x 4″ 36 x 7″ Twin } Solid	13 ft.	Heavy Truck	10,000 lbs.
Knox	40	4	Air	Selective	Shaft	.....	.....	Aux. Fire Dep't Wagon	Special Des'n.
Knox	40	4	Air	Selective	Shaft	.....	.....	Truck	5,000 lbs.
Knox	40	4	Air	Selective	Shaft	.....	.....	Truck	6,000 lbs.
Olds	16–18	2	Water	Planetary	Chain	34 x 4″ Solid	96″	Light Truck or 'Bus	3,000 lbs.
Franklin	12	4	Air	Sliding	Worm	30 x 3½″ Solid	90″	Light Truck	2,000 lbs.
Cadillac	10	1	Water	Planetary	Chain	30 x 3″ Pneumatic	76″	Delivery	1,000 lbs.
Rambler	20	2	Water	Planetary	Chain	32 x 4″ Pneumatic	100″	Delivery	1,000 lbs.
Frayer-Miller	24	4	Air	Sliding	Chain	34 x 3½—36 x 5″	100″	Truck	5,000 lbs.
Miller	45	4	Water	Sliding	Chain	.....	.....	Sight Seeing	20 Pass'rs
Miller	45	4	Water	Sliding	Chain	.....	.....	Truck	10,000 lbs.
Iroquois	60	4	Water	Sliding	Chain	.....	.....	Truck	.....
Iroquois	25	4	Water	Sliding	Chain	.....	.....	Delivery	1,000 lbs.
Lambert	18	2	Water	Planetary	Chain	32 x 3½″ & 4″	96″	Light Truck	3,000 lbs.
Gaeth	12	1	Water	Planetary	Chain	34 x 4″ 38 x 4″	103″	Delivery	1,500 lbs.
Premier	24	4	.....	.....	Shaft	.....	.....	.....	.....
Maxwell	20	2	Water	Sliding	Shaft	30 x 3	.....	Delivery	.....

DETAILS OF AMERICAN GASOLINE COMMERCIAL VEHICLES—Continued

Car	H.P.	No. Cylinders	Cooling	Transmission	Drive	Tires	Wheelbase	Type	Carrying Capacity
Maxwell	20	2	Water	Sliding	Shaft			Light Truck	
Olds	20	2	Water	Planetary	Chain	34 x 4" Solid		Truck	6,000 lbs.
Soules	22	2	Water	Planetary	Shaft			Delivery	2,000 lbs.
Manhattan		4	Water		Chain			Truck	10,000 lbs.
Manhattan		4	Water		Chain			Bus	12 Pass'grs.
Climax	10	1	Water	Planetary	Chain	30 x 3" Solid		Delivery	1,000 lbs.
Hewitt	30	4	Water	Planetary	Chain	36 x 4" & 8" Solid		Truck	8,000 lbs.
Mitchell	14	2	Water	Sliding	Worm	30 x 3½" Solid		Light Truck	2,000 lbs.
Biddle-Murray	24	4	Water		Chain	36 x 5" Solid		Truck	8,000 lbs.
Knox	16	2	Air		Chain	36 x 4 & 6" Solid		Truck	6,000 lbs.
Logan, Model N	10	2	Air	Sliding	Chain	30 x 3" Solid		Light Bus Light Truck	6 Pas'grs. 1,200 lbs.
Mitchell	12	2	Water	Sliding	Worm	32 x 3" Solid	100"	Light Truck	1,500 lbs.
Hewitt	10	1	Water	Planetary	Chain	30 x 2½" & 3" Solid	84"	Delivery	1,000 lbs.
Knox	10	1	Air	Planetary	Chain	32 x 3½" Solid	78"	Delivery	1,500 lbs.
Northern	20	2	Water	Planetary	Shaft	32 x 3½" Solid	106"	Truck	1,000 lbs.
Cartercar	20	2	Water	Friction	Chain	30 x 3½" Pneumatic	96"	Delivery	1,000 lbs.
Covert		2	Water	Planetary	Shaft			Delivery	1,000 lbs.
Maxwell	20	2	Water	Sliding	Shaft	30 x 3½" Pneumatic	86"	Delivery	1,000 lbs.
Reo	16	2	Water	Planetary	Chain	32 x 4" Pneumatic	90"	Delivery	1,500 lbs.
Rapid	18	2	Water	Planetary	Chain	32 x 3½" Solid	90"	Express	3,000 lbs.
Rapid	18	2	Water	Planetary	Chain	32 & 34 x 3½" Solid	111"	Truck	3,000 lbs.
Rapid	18	2	Water	Planetary	Chain	32 x 3" Solid	116"	Sight Seeing	20 Pass'grs
Deere	22	2	Water	Sliding	Chain	36 x 4" Solid		Truck	6,000 lbs.
Logan, Model M	30	2	Water	Selective	Chain	32 x 4½" Solid	108"	Truck	6,000 lbs.
Atlas	30	2	Water	Selective	Shaft	32 x 3½" & 4" Solid	102"	Light Truck	3,000 lbs.
Atlas	30	2	Water	Selective	Shaft	32 x 4" & 4½" Solid	132"	Sight-Seeing	18 Pass'grs
Atlas	24	2	Water	Selective	Shaft	32 x 4" & 5" Solid	96"	Truck	4,000 lbs.
Frayer-Miller	24	4	Air	Selective	Chain	34 x 3½" & 5" Solid	112"	Truck	6,000 lbs.
Atlas	24	2	Water	Selective	Shaft	34 x 5" & 6" Solid	114"	Truck	6,000 lbs.
Commerce	30	4	Water	Sliding	Chain	32 x 4"—36 x 5" Solid	109"	Truck	5,000 lbs.
American	40	4	Water	Planetary	Chain	36 x 5" Solid	118"	Truck	6,000 lbs.
American	40	4	Water	Planetary	Chain	36 x 7" Solid	118"	Brewery	10,000 lbs.
Autocar Eq. Co.		4	Water	Sliding	Chain	36 x 3½" & 4" Solid	95"	Truck	6,000 lbs.
Autocar Eq. Co.		4	Water	Sliding	Chain	36 x 3½" & 4" Solid		Sight-Seeing	20 Pas'grs.
Autocar Eq. Co.	50	4	Water	Sliding	Chain	36 x 5" & 7" Solid	120"	Truck	10,000 lbs.
Autocar Eq. Co.		4	Water	Sliding	Chain	36 x 3½"—42 x 4" Solid	100"	Brougham	10 Pas'grs.
Johnson	Steam			Sliding	Shaft			Trucks	1 to 5 tons
Hewitt	30	4	Water	Planetary	Chain	36 x 5" & 8" Solid	168"	Truck	10,000 lbs.
Matheson	30	4	Water	Friction	Chain	36 x 6" Solid	96"	Truck	10,000 lbs.
Am. M. Mfg. Co.	30	4	Water	Selective	Chain	Solid		Truck	5,000 lbs.
Iroquois	45	4	Water		Chain	Solid		Sight-Seeing	15 Pas'grs.
Iroquois	60	4	Water		Chain	Solid		Truck	10,000 lbs.
Reliance	30	2	Water		Chain	Solid		Truck	1½, 2 & 3 tons.
Couple Gear	40	4	Water	Electric	4 Motors	Solid		Truck	10,000 lbs.
Rockliff	18	2	Water	Planetary	Chain	36 x 3" Solid	126"	Truck	6,000 lbs.

DETAILS OF AMERICAN ELECTRIC COMMERCIAL VEHICLES

Car	Motors	Cells in Battery	Drive	Tires	Type	Capacity
Pope-Waverley	1	42	Chain	32 x 3—36 x 3"	Delivery	1,000 lbs.
Pope-Waverley	1	40	Chain	30 x 3"	Light Truck	1,000 lbs.
Pope-Waverley	2	42	Chain	36 x 3—42 x 3"	Light Truck	2,000 lbs.
Pope-Waverley	2	42	Chain	36 x 6—42 x 6"	Heavy Truck	10,000 lbs.
Pope-Waverley	2	42	Chain	36 x 5"	Heavy Truck	6,000 lbs.
McCrea Motor Truck Co.	2	44	Chain	42" Wood or Steel	Truck	12,000 lbs.
McCrea Motor Truck Co.	1	22	Chain	36 x 2½"	Delivery	1,000 lbs.
General Vehicle Co.	1	44	Chain	32 x 3"	Delivery	1,000 lbs.
General Vehicle Co.	1	44	Chain	36 x 4"	Light Truck	2,000 lbs.
General Vehicle Co.	2	44	Chain	36 x 6"	Heavy Truck	7,000 lbs.
General Vehicle Co.	2	44	Chain	36 x 7—36 x 48"	Heavy Truck	10,000 lbs.
Studebaker	2	40	Chain		'Bus	14 Passengers
Studebaker	2		Chain		Delivery	1,000 lbs
Studebaker	2		Chain		Truck	2,500 lbs.
Studebaker	2		Chain		Ambulance	
Studebaker	2		Chain		Truck	7,000 lbs.
Lansden	1		Chain	32 x 2½"	Delivery	1,000 lbs.
Lansden	1		Chain	32 x 3"	Delivery	2,000 lbs.
Autocar		42	Chain	36 x 3½"	Sight-Seeing	24 Passengers
Lansden	1		Chain	36 x 4"	Truck	4,000 lbs.
Lansden	1		Chain	36 x 5"	Truck	6,000 lbs.
Commercial	4	42	Gear	36 x 6" Wood	Truck	10,200 lbs.
Commercial	4	42	Gear	36 x 6" & 7"	Sight-Seeing	30 Passengers
Couple Gear	4	44	Gear	36 x 7"	Truck	10,000 lbs.
Commercial	4	44	Gear		Truck	8,000 lbs.
Commercial	4	44	Gear		Furniture	6,000 lbs.

CHICAGO A GREAT AUTOMOBILE CENTER

CHICAGO, Jan. 28.—To-day Chicago, the metropolis of the West, stands out as a great automobile center. The industry here has spread to such an extent in the past few years, in a remarkably short time, in fact, that it is recognized the country over as second only to New York in this respect. And in many ways it does not have to bow the neck even to the Gotham city. A casual visit to the district of this city designated as "automobile row," from Twelfth street to Sixteenth along Michigan, would be more than enough to demonstrate to anybody that such is the case.

The industry here has grown and extended by jumps until it forms no small part of the city's greatness. Nothing is done by halves in this thriving center of business, and this extends over every phase of industry. When it is said that nearly one hundred automobile firms are situated here within a comparatively small radius, the extent of the business done can be determined in a vague way. Chicago is essentially a distributing point as regards automobiling, yet it is coming along rapidly as a manufacturing center of cars. In a few years it is probable that many large factories of reputation will be centered here.

By virtue of the city's situation comes its adaptability as a distributing point. It supplies the Northwest, the West, in some cases as far as the coast, and in others to Denver, the Southwest and the South. Most of the manufacturing companies have their Western agents here, who in turn allot the different territories to other agents throughout the country. Moreover, Chicago is near the center of the manufacturing district, Detroit, Michigan. All of these advantages have placed Chicago in the position which it now occupies in the automobile world.

In the city itself there is a great deal of business done. Thousands and thousands of automobiles are owned here, and the presence of so many wealthy men makes the industry a permanent one. Taking all of these considerations together it is not surprising that the large number of dealers have become pressed for quarters in so short a time. Firms have moved in here with small accommodations, have extended them in the course of a year or so, repeated the process, and are now at a loss what course to pursue. Rents along Michigan avenue have been doubled in most cases in the past five years, due to the persistency in which the automobile dealers have been grouping together.

This grouping of the dealers forms an interesting page in the history of the industry's growth in Chicago. Some few years ago Wabash avenue was "automobile row." There were but few firms here in those days, and they extended all the way from Adams street on the north, to Harrison or Peck court on the south. Then three firms, the Winton, the Locomobile and the Woods took quarters on Michigan avenue in the neighborhood of Twelfth and Thirteenth streets. Others finding that situation an ideal one from a business standpoint, being on a well-paved street and away from the loop district, began to follow the pioneers' example, and one by one they moved into adjoining quarters, until now but two or three remain on Wabash avenue, and they will probably vacate in the near future. Thus was the new "row" brought into existence and extended.

As new firms came in they also took their station on Michigan avenue, until now the "row" is not bounded by Twelfth and Seventeenth streets, but by Harrison and Twenty-second streets. In fact, but a few days ago a firm, whose name was not given out, has taken a lease of property at 2223 Michigan avenue. In time this whole line will probably be devoted almost exclusively to the automobile and allied interests, the gaps filling one by one.

Another indication of the extent of the industry here is the large number of dealers in accessories now established here. In some cases firms have built entire buildings, using a part of them for their own use and renting out the remaining portion. This is especially the case of some of the tire dealers. Anything that pertains to the automobile can be purchased here in large quantities, and Chicago is also the distributing point of most of these big firms.

The fact that Chicago has come to be regarded as an automobile center attracts thousands of would-be buyers here every year, and especially has this been the case during the season just passed. Hotel men have emphasized the fact that large numbers of their customers have come here for the express purpose of looking over cars with an idea of purchase. Some come from as far south as New Orleans, and it is not at all startling when a man arrives here from San Francisco or even Mexico City with that end in view. The salesrooms of the dealers are thronged with interested persons daily, and the demonstrating cars are kept in use all the time.

One fact alone which assists the spread of automobiling here in the city, is the presence of excellent boulevards, park systems and country roads surrounding the city for a radius of fifty or seventy-five miles. Side trips to such places as Joliet, Aurora, Hammond, Ind., Kenosha, Wis., and various summer resorts, keep the interest in automobiles up, and stimulates local citizens to purchase cars.

An institution which has also boosted the trade conditions here is an association, formed among the dealers themselves, called the Chicago Automobile Trades Association. This body is formed for the purpose of promoting automobile events that will bring the game before the notice of the public. Hill climbs, endurance runs, economy tests and the like come within its province, and it has already stimulated the game here to a marked degree. It works in harmony with the Chicago Automobile Club, which is essentially a social organization.

The Chicago Automobile Club has done a great deal toward making automobiling in Chicago such a distinct success. It has grown to be a leader in automobile affairs throughout the country, and perhaps ranks second to the organization at Gotham City. It has promoted mammoth meets in the past, and has made a specialty of runs and tours to towns and cities in the neighborhood of Chicago. It is the presence of such a splendid body as this that has helped in a great measure to make Chicago a real center of automobiling.

Aside from business features the situation of this great city makes it such that it is the natural point for the touring autoist to head for. Long runs from New York to Chicago have been frequent, and also from Chicago to the Eastern city. Transcontinental tourists pass through the Windy City, and parties from all over the country, in fact, make it their halting point. These people find Chicago an ideal spot for the automobilist. Both from a social and a business outlook Chicago stands out preeminent, and, what is more, it has a future than can scarcely be conceived of.

In many respects its future appears now even greater than that of New York city, due mainly to its location. New York is too far from the western cities to make much of a mark there, but Chicago, standing midway, as it were, has the country to conquer. The citizens of Chicago recognize this fact, and so do the civil authorities. Much attention is paid to the affairs of the autoist, and his claims are looked into carefully. The city recognizes the fact that a decided interest in automobiling is bound to help the city in more ways than one, and will do everything to foster it.

HONEYCOMB RADIATORS—THEIR CONSTRUCTION*

By L. BAUDRY DE SAUNIER IN *OMNIA*.

IN a preceding article a description was given of the construction of a winged-tubed radiator like that used on the winning car in the last Vanderbilt race. In the present study, the other kind—the honeycomb radiator—will be considered.

The honeycomb radiator would be perfect if it did not leak. It has a considerable radiating surface, for it offers in a small space an enormous surface of exchange of temperatures between the water and air; in other words, it has the power *par excellence* of rapidly lowering the temperature of the water circulating within it. But when it is constructed entirely by hand it becomes

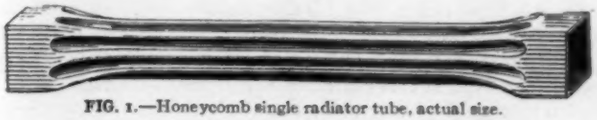


FIG. 1.—Honeycomb single radiator tube, actual size.

a precarious apparatus, for the simple reason that, being composed very often of five or six thousand elements, which ought to be soldered together, it cannot escape human imperfections; a little solder missing here and there through stupidness, carelessness or awkwardness of a workman, and you have a detestable apparatus. The imperfection may be discovered during the tests. But more frequently the hand-made honeycomb radiator is watertight when first tested, and only develops a chronic leak when it has undergone a little road shaking.

Hand soldering is the first honeycomb vice. The manner in which the tubes are assembled is often the second. It is impossible to deal here with all the methods of uniting honeycomb radiator tubes. Among them are many which simply join the

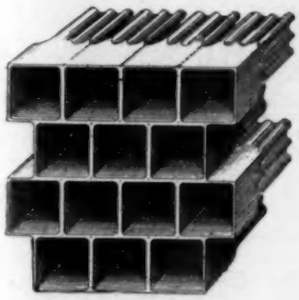


FIG. 2.—Front view of tubes in position.

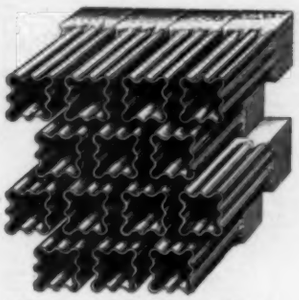


FIG. 3.—Sectional view of tubes cut in center, showing water circulation space.

parts together by soldered points. Large, flat surfaces should, on the contrary, be employed, so that the complete radiator forms, as it were, a hollow block in which have been bored an infinite number of small channels for the passage of air. In this metal block, the form of which may be varied infinitely, the water enters from above and passes downwards, zigzagging between the small tubes through which air is drawn by the revolving fan in their rear.

As will be seen, the tubes are separated one from the other by a space of one or two millimeters, to allow the water to circulate. Some constructors obtain this separation by two thin, perforated plates, each of which carries an end of the tubes in front and behind. Solder is run round the head and tail of each tube.

In one of the best French radiators, the Establie, employed among others on Panhard automobiles, a different and simpler method is followed. Copper tubes 3-10 millimeters in thickness are used. They are fluted into a shape somewhat resembling a Maltese cross (Figs. 2 and 3), with a view to increasing the air and water surface. These tubes have a uniform length, Fig. 1 being a full-sized drawing of a 3 1-4-inch tube of 3-8-inch side measurement.

It is necessary to change these fluted tubes, so that their ends shall touch, while their bodies remain separated, for the necessary passage of water. By means of a special machine the fluted end of each tube is opened out to give it a square form, as in Fig. 4. The constructor has now a number of tubes, the two extremities of which are larger than the body, so that when assembled the ends only touch. No cage, platform or network is needed to consolidate the tubes. This form of construction unites simplicity and solidity, for it gives to the extremities of the tubes very large contact surfaces, as is shown in Fig. 2.

The tubes are placed side by side, and built up brickwise. In addition to greater strength, the efficiency of the radiator is increased by this arrangement, since it causes the water to descend in zigzag instead of in a vertical line. The horizontal surface of each tube is also more efficiently utilized.

FIG. 4.—Square end of tube.

Should one of the tubes spring a leak, which is very improbable, a repair can be readily made. A smaller size tube is pushed within the defective one (Fig. 5), and its fluted sides flattened out with a screwdriver or a piece of wood, assuming the form shown in Fig. 4.

FIG. 5.—Repair of broken tube.

Automobile bonnets and radiators have, as everybody knows, a variety of shapes; the united tubes should therefore have the outline necessary for the type of car on which it will serve. The bundles of tubes are locked up in iron frames (Fig. 6) very similar to the chases used by printers all over the world for locking up their forms, fitted with an inner metal frame cut out to the shape of the automobile hood. When locked up, the frame is placed on a flat surface, and one of its faces soaked in a bath of chloride of zinc. By means of the four bars shown in the engraving the frame is placed in the longitudinal opening of an oven (Fig. 7) and the ends of the tubes dipped into a bath of molten metal. The dip should be long enough to allow the soldering metal to penetrate between all the joined surfaces, but not so long as to cause any deterioration of the tubes. The frame is withdrawn, turned over, and the opposite end of the tubes treated in the same manner. The block of the radiator is now formed; all the soldered surfaces have necessarily the same force. After a thorough washing in water, the block of tubes is fitted into a metal frame, forming water tank. This reservoir is provided with suitable divisions forcing the water to descend through the whole series of tubes.

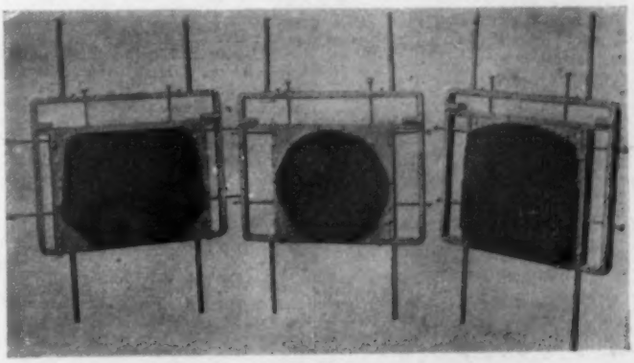


FIG. 6.—Tubes assembled in frames before soldering.

* Translation, by W. F. Bradley. A continuation of the subject of "Radiators," published in "The Automobile," November 8, pages 609-610.

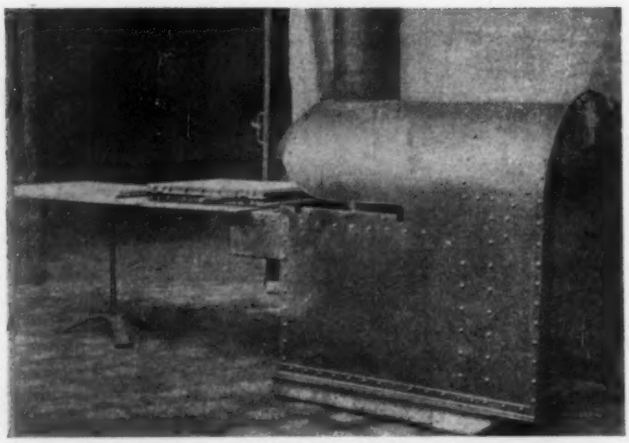


FIG. 7.—Side view of oven equipped with soldering bath.

Before being put into service each radiator is tested in the same way as a pneumatic tire. The outlet is corked up, a rubber tube fitted over the inlet, and the radiator put into a tank of water. Air is pumped in, and if no air bubble rises to the surface of the water the radiator is passed as fit for service.

Radiators vary in width and height, according to the size of the engine for which they are intended. In addition, the length of the tubes varies between three and six inches, their sectional area being correspondingly increased or decreased. It is generally admitted that a half-meter square of radiating surface is necessary per one horsepower for a four-cylinder motor. For a monocylindric or a two-cylinder engine the amount would have to be increased; for a six-cylinder engine it could be decreased. Between 10 and 50 horsepower this formula is generally exact.

Beyond certain limits the increase of the external area of the radiator is an impossibility. A large radiating surface must then be obtained by making the tubes longer or more numerous, thus increasing, within the same external area, the amount of metal coming in contact with the water and air. The longer and thinner the tubes for a given external area, the greater the cooling power. French constructors generally employ tubes about 3-10-inch side measurement. Certain Italian builders have taken much smaller tubes in order to augment the radiating surface, but experience has shown that very small tubes offer a serious resistance to the passage of the air, and that they are apt to choke with dust and mud.

A standard French honeycomb radiator for a 14-horsepower engine consists of about 2,000 tubes 3 7-8 inches long. A radiator for a 35-horsepower engine contains 5,000 tubes. One thousand small tubes 3 7-8 inches long hold within them about 1 4-5 pints of water. A bundle of large section tubes holds a quantity of water equal to about half the volume which it represents.

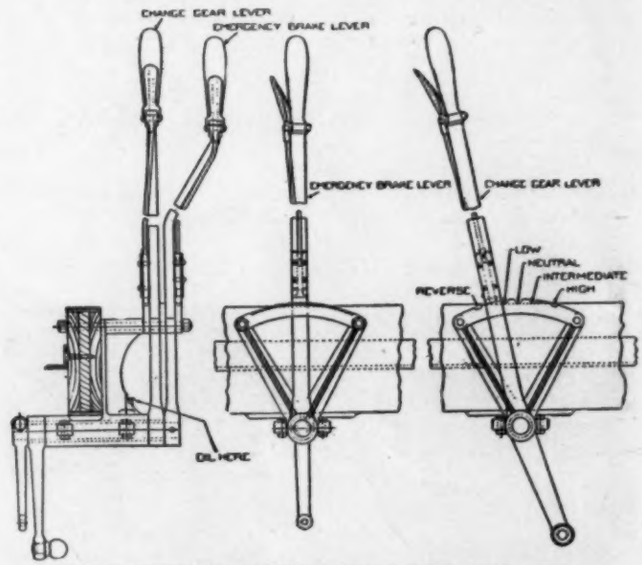
FIG. 8.—Radiator that withstood overturn of car. The tubes were uninjured.

The method of soldering employed on the radiators just described is far less susceptible to heat than is generally imagined. Thus the cooling water could be drawn off and the engine run until the cylinder heads are a bright red (800 degrees) without the radiator showing the least sign of melting, notwithstanding its proximity. The layer of air between the engine and radiator is such a bad conductor of heat that it would never communicate the 300 degrees necessary to melt the solder. If a radiator were frozen, a soldering lamp could be passed over its surface without danger. The ice would change into water, and, if the experiment were continued, into steam, but the lamp would never be able to give sufficient heat to melt the solder.

As an instance of the solidity of this type of radiator, Fig. 8 will be noted with interest. The car on which this radiator was fitted overturned into a pit. The lugs and water inlet were broken off, the reservoir rendered practically useless, but the tubes remained intact.

A NOVEL SLIDING GEAR CONTROL.

A rather interesting departure from previous systems of sliding-gear control is that used for the first time on the 1907 Franklin cars, the arrangement being that shown in the illustration. As is well known by every one who is experienced in the manipulation of a gear of this character, the necessity for manipulating the latch in passing from one speed to another is the chief point in which the progressive system of gear changing is less desirable than the selective system, and doubtless accounts for much of the increasing vogue of the latter. By the Franklin construction, manipulation of the latch is required only in passing from the intermediate to the high or low speeds and in passing from the low to the reverse. All other changes are effected simply by pushing or pulling upon the lever, without unlatching. To secure this result, no complication of mechanism is involved, the alteration from the construction previously used consisting of nothing more radical than a beveling of the edges of the notches on the sides from which the lever is required to move without manipulation of the latch. An ordinary plain sector is used, with notches —from front to back—for high, intermediate, neutral, low, and reverse, as shown in the drawing.



THREE VIEWS OF FRANKLIN SELF-FINDING GEAR SHIFT.

GROWTH OF THE FRENCH INDUSTRY.

The French automobile industry during the last year has continued to make remarkable strides. Some idea may be gathered of the progress made by a compilation of the statistics of exportation, which have just become available, which show that the exportation of French machines during the first nine months of 1906 exceeded those for the corresponding period of 1905 by 33,841,000 francs; the total exportation amounted to 126,451,000 francs, against an importation of foreign cars of only 7,150,000.

LETTERS INTERESTING AND INSTRUCTIVE

A Trouble with Peculiar Symptoms.

Editor THE AUTOMOBILE:

[550.]—Will you kindly aid me in the following question: I have a standard double-opposed runabout made by a prominent New York firm, jump spark ignition, water-cooled. After one of the periodical trips to the factory for repair, it was returned with its present trouble; the makers, after expensive experimental attempts at repair, return it in the same condition, look wise, and say nothing, but charge promptly. The car runs well on the floor, noiselessly and with regular explosions at all speeds, with throttle and spark in any position. It does the same in running at slow speed (planetary). At high speed (direct drive) it runs well, with the spark retarded, irrespective of the quantity of gas allowance. The moment, however, the spark is advanced, a pounding results in one cylinder, and advancing spark still more, in the second cylinder. If, however, I advance spark very gradually there is no pounding whatever. Again, driving at high speed, with gas throttled, and spark gradually advanced to the maximum, it runs well; however, on the moment of allowing a trifle more gas, immediately the pounding commences, and continues till the car gains a fair speed, then the pounding ceases. The pounding is one of preignition, as it is the same when the spark is too far advanced. The car is new and has run less than four months, and is of 1906 make. All bearings in motor are snug; storage battery; compression good; valves newly ground; spark is rich; timing apparently correct; exhaust piping clean. Moved easily on the floor by hand; cranked easily with stopcocks open. What causes this apparent lack of power? A SUBSCRIBER.

Chicago, Ill.

Though you state the symptoms of the difficulty with your car with considerable fullness, they nevertheless fail to enable us to make a positive diagnosis, so we shall have to confine ourselves to a few general suggestions, leaving it to the ingenuity and experience of our readers to discover perhaps the detailed nature of the trouble that confronts you. Our first suspicion, which we have hopes may be confirmed by further investigation upon your part, is that there is nothing the matter, unless possibly a slight variation in the timing between the two cylinders. This condition may, however, be complicated by positions of commutator contact slightly ahead of what they should be at all speeds. Our reason for these theories is that most of the phenomena, as you state them, are perfectly normal for a motor of ordinary type. You say that "the car runs well on the floor, noiselessly and with regular explosions at all speeds, with throttle and spark in *any* position." This is all as it should be, if we assume that it is because of the flexibility of the unloaded motor that it changes "imperceptibly and without pounding to adapt itself to changes in spark and throttle conditions. Likewise, "at slow speed," it should run without pounding. The fact that at high speed "it runs well, with spark retarded," seems to indicate that the interconnection between spark lever and commutator is in such condition of adjustment as to make the spark appear greatly advanced when it really is not so advanced. In the next three sentences of your letter you describe only the normal action of any motor, with one reservation, when the ignition is advanced too quickly under load. The reservation refers to the difference in time between the commencement of pounding in one cylinder and its commencement in the other. This may be taken as evidence of the previously suggested minor maladjustment within the commutator itself. Look more carefully for some sign of this condition, drive without attempting to produce sudden acceleration by spark manipulation, and watch this column for the opinion of some bright reader who may be able to show us we are both wrong, and we venture to predict that your troubles will soon be at an end. In your final question we note that you refer to an "apparent lack of power," which you do not mention elsewhere in your letter. Do you simply assume from the other considerations you mention that such lack of power exists, or is it definitely a fact that the engine does not "pull?"

The Characteristics of Hot-wire Ignition.

Editor THE AUTOMOBILE:

[551.]—In the course of reading various material that has appeared in the trade periodicals and the various volumes that have been devoted to gas engineering, I have run across various references to "hot-wire ignition," but nowhere have I been able to find a description of such an ignition system, or any extended statement of its advantages and disadvantages. So, as a subscriber to and an interested reader of "The Automobile," I venture to ask if you will devote some space in your columns to an exposition of this subject, in which I believe others as well as myself are apt to be interested. CLINTON L. HARGREAVES.

Hot-wire ignition has never found more than occasional or experimental application to gas engines, and we know of no case of its application to automobile engines, so it is only natural that it should not have achieved extensive treatment in the literature of the subject. In the only instance we can recall of its use, it took the form of a platinum-wire cage, maintained at a cherry-red heat by the passage of an electric current through it. As in the case of the better known hot tube, the contact of the mixture with the heated surfaces brings about ignition very effectively at the moment of such contact. Unlike the hot tube, however, in which the very construction itself is such as to make any similar protection unnecessary, the hot wire must be shielded by some sort of movable shield in the ordinary type of internal combustion motor to prevent ignition during the suction of compression stroke. Besides this difficulty of timing hot-wire ignition, there is the materially greater current consumption to be reckoned with. It has been proposed, with a prospect of success that may be very real within a year or two, to combine certain modification of the present cycles of internal combustion engine operation with the use of an ignition system involving only a very short and small diameter wire, kept hot by a storage battery or dynamo current. The slight increase in current required, it is argued, would be more than offset by the elimination of coils, vibrators, commutator, etc., none of which can very well be claimed to make for either simplicity or reliability, while the timing problem would be solved in the modifications of the engine cycle. In a series of articles soon to be published in THE AUTOMOBILE, we shall devote considerable space to this interesting subject.

Our Correspondent Must Judge for Himself.

Editor THE AUTOMOBILE:

[552.]—As a subscriber to your journal, I would like to ask a few questions. Would you advise the purchase of a car with six cylinders such as the Ford company makes, or would you choose a four-cylinder car in preference? I simply mentioned the Ford Company's name because they manufacture such a car, though I presume there are others as well. Also, do you think a two-speed planetary transmission is the proper thing for a six-cylinder car, or would you prefer the sliding or selective type? Can you give me a list of manufacturers who make six-cylinder motors to sell to automobile makers? F. F. MILLER.

Akron, O.

There is as much difference of opinion as to the relative advantages of the six and four-cylinder types of cars as there is concerning what constitutes beauty in a woman, and, as you would have to depend on your own personal opinion in the latter case, so you will also in the former. Why not ask someone who has had experience with a six-cylinder car? Give him free rein, and let him tell you all about it; then go to someone else who has had sufficient experience with a standard make of four-cylinder car and do likewise. If you have the time and opportunity to repeat the process several times in each case, so much the better. You can then be safely guided by the preponderance of evidence on either side after you have balanced the accounts. As to the suitability of the planetary gear in such a situation, all

we can say is that the design in question is that of a well-known engineer; it was not adopted haphazard, but only after thorough trial, and, as after a year's experience with it on a number of cars, he has seen fit to continue it unaltered this year, there appears to be no reason to doubt its efficiency. We may add that it is a more "foolproof" type than the others. We cannot help you out on the last question; probably some of our advertisers in that line may be able to do so.

An Interesting Case of Responsibility.

Editor THE AUTOMOBILE:

[553.]—The "Literary Digest" of January 12, in a series of interesting items relative to automobile accidents, contains the following excerpt from a recent issue of "The Automobile":

"An agent's driver left a car this way at the curb facing one belonging to another agent, and which stood about fifty feet away. One of the usual type of hangers-on about the garage began to monkey with the side levers, and before he realized what he had done the car started off at a good pace down the avenue. It brought up against the second car with a crash, and the resulting damage led to legal proceedings in which the plaintiff was worsted, owing to the non-liability of the defendant for the acts of the irresponsible person who was the moving cause of the damage."

The case referred to appears to be analogous to a case that I have at present in the courts here, and I shall be very glad if you can give me the title of the case, and the name of the court in which the same was determined. The "Literary Digest" does not give the date of the publication from which the quotation is made, but I trust that you can give me the desired information without putting yourselves to much trouble.

Denver, Col. HENRY H. CLARK, Counsellor at Law.

The incident you refer to appeared in THE AUTOMOBILE, under the caption of "How Not to Leave a Car," as the accident in question was the result of leaving a car at the curb with the motor running and the gears in engagement, nothing but the emergency brake holding the clutch out. As the brake in question is operated by a side lever, its release is a natural result of tampering with the latter, and as this permits the clutch to engage, the car will start if the gears of the transmission are in mesh. The action lay between two of the Chicago representatives of leading manufacturers, and as the amount claimed was small, it was probably not brought in a court of record. We cannot cite the case, nor state the court it was brought in, nor can we say whether the matter was ever carried any higher.

Shock Absorbers as a Standard Equipment.

Editor THE AUTOMOBILE:

[554.]—There are numerous shock absorbers advertised in your magazine, claiming to be proof against the breakage of springs, etc. If this is so, why are they not generally adopted by the manufacturers of automobiles? A SUBSCRIBER.

Sleepy Eye, Minn.

This is a question that only the manufacturers themselves can answer satisfactorily. Probably it is because the shock absorber originated as an accessory and still remains in that category; it has not yet reached the status of forming an integral part of the standard equipment of the average car. It may be added for your information that there are a number of manufacturers of well-known cars who have decided to fit their cars with shock absorbers regularly.

Putting a Condenser on a Small Steamer.

Editor THE AUTOMOBILE:

[555.]—I have a small steam runabout, and would like to know the practicability of putting in a condenser by dropping the exhaust to bottom of water tank through coil and place drip through tank to pump placed below, rising again with the exhaust to the open air.

Atlantic City, N. J. JOHN W. TAYLOR.

There appears to be no reason why such an expedient should not prove successful, though it would seem that unless such a condenser can be built or purchased at a comparatively low cost, the benefit to be gained would hardly warrant the outlay. If possible the tank should be placed in such a position that the cooling water may be kept at as low a temperature as possible, as on this will depend the efficiency of the condenser.

Wants to Know About Self-Starting Devices.

Editor THE AUTOMOBILE:

[556.]—If, to your knowledge, there is no motor starter in existence, is there any desired by the manufacturers, and would you consider an invention of any great value, that would successfully start gasoline automobile and stationary engines from a standstill, dispensing with batteries entirely and using a small dynamo to furnish spark after engine is started?

Columbus, O. FRANK FINSTERWALD.

There are quite a number of self-starting devices on the market for starting both automobile and stationary gasoline engines, and have been for several years. Various means are employed, such as springs, compressed air, gasoline and air, acetylene gas and air, carbonic acid gas and others. In spite of this, however, there would undoubtedly be a considerable demand for a device that was an improvement over any of the foregoing. None of those mentioned have met with any very general adoption, except for starting stationary engines.

Agricultural Implements That Are Motor-Driven.

Editor THE AUTOMOBILE:

[557.]—Will you kindly advise me if there is made in this country a machine used for agricultural purposes, such as plowing and heavy hauling? I understand that there is such a machine used quite extensively in England, and would like to know who makes them, as we have had applications for two of them.

Zanesville, O. CHAS. E. FIX AUTO. COMPANY.

So far as we are aware, there is no such machine made in this country, using gasoline as a motive power, though portable gasoline engines are employed for agricultural work to the extent of many thousands. The English machines you refer to are made by Ivel Motors, Ltd. We understand that the International Harvester Company, Chicago, Ill., has been experimenting along the same lines, and as they are probably the largest builders of agricultural machinery in the world, can doubtless give you the information desired.

Roller Contact and Wipe Contact in Commutators.

Editor THE AUTOMOBILE:

[558.]—What are the respective advantages and disadvantages of the roller contact and the wipe contact in the modern commutator?

Watertown, Wis. M. H. GAEBLER.

Generally speaking, wear is the greatest disadvantage of the wipe type of contact maker, though this refers more to the old time form of wipe contact maker, as numerous improvements have been made which have overcome this to a very great degree. The chief disadvantage of the roller type is the difficulty of making an adequate electrical contact, though no unusual amount of trouble appears to result from this cause in the modern timers of this class. The ideal timer is one that combines the efficient contact of the old time wipe type with the minimum wear of the roller or ball type.

THE FIELD FOR RESILIENT WHEELS.

Editor THE AUTOMOBILE:

[559.]—In conversation with Thomas L. White just previous to the Madison Square Garden show, he strongly insisted that the broad field for a resilient, but not pneumatic, wheel is a wheel for commercial purposes. It was made impressively manifest to the writer during the Garden week, by leading engineers of prominent builders, also, that the commercial field is a very broad and continually expanding one and well worth cultivating, but the query immediately presents itself to the inventive mind: What is the consensus of opinion of both manufacturers and users combined, as to what device will meet all the requirements? One engineer prominently connected decisively adhered to the opinion that any resilient wheel, rubber covered to give traction, would meet popular favor, yet in less than one hour another, equally as prominent, determinedly insisted that any form of wheel for commercial use having rubber as a component part is not to be considered for permanent and economical adoption. Which was right? It is such diversity of opinions as quoted that places the progressive inventor between the devil of doubt and the deep sea of uncertainty. Having patented a resilient but not pneumatic wheel for pleasure pur-

poses which has met public approval, as manifested by orders received during show week, and which was illustrated and described in the October 26 issue of "The Automobile," it intuitively presents itself as a reasonable proposition and conclusion that a wheel can be produced in the immediate future that will conform to any and all intelligent demands, when it is once made known exactly what is required. The extreme variations of weight of load to be carried is a complex and difficult problem, for it is assumed that a truck may leave the warehouse or shipping room with one load weighing, say, five tons, and the succeeding load may weigh less than one ton, but sufficient resiliency must be maintained under these widely divergent approximate loads to give satisfactory results and meet public approval. Probably no pneumatic or solid tire has been produced that gives equal resiliency under such varying loads, and while it may be possible, yet it appears wholly improbable that such a device will make its appearance. A wheel to be equally resilient in conveying the maximum and minimum load over every conceivable construction of road must of necessity be provided with a compensating appliance which will adapt itself to constantly varying conditions.

This communication will have met its express purpose if it produces definite information from intelligent and progressive founts of knowledge through the columns of "The Automobile" or otherwise.

H. S. PULLMAN.

Meriden, Conn.

FROM AN ADMIRER OF THE "HORSELESS AGE."

Editor THE AUTOMOBILE:

[560.]—The venom of your attack upon the editor of the "Horseless Age," in your issue of January 10, rather suggests that it was provoked by the sting of truth. In commenting on your editorial, I should like to point out that the fact that a certain article will "sell" is not, of itself, a conclusive argument in its favor, except from the point of view of those who market the article. Opium, indecent literature, and many other undesirable commodities would, if permitted, command large sales. Similarly, children, if at liberty to do so, would maintain a flourishing market for all sorts of improper playthings, which would be a menace and nuisance to everybody else. This is about the situation with the high-powered runabout, except that those who buy them are, on account of their years, not supposed to be children.

I am not saying that the high-powered runabout is, in itself, a menace and a nuisance, as it can be and often is handled with as much temperance as the high-powered touring car. But the fact remains that a 50 or 60-horsepower car, costing from four to five thousand dollars and capable of accommodating only two, or at most three, persons, is not a sensible, legitimate, or sane form of vehicle and, in general, appeals only to the class of individuals who want to "cut a dash" with a car that is racy and sporty in appearance and who want to gratify their own ambitions with a machine that will give them the greatest speed for their money. "Greatest speed for the money" is the only real excuse for the high-powered runabout, and were it not for speed maniacs and cheap sports, sales of this type would cut a small figure.

It is therefore the nature of the demand this vehicle caters to, and not the vehicle itself, that causes sober-minded automobilists to disapprove of the present fad in these "hell wagons," as they are so aptly termed. It is not a healthy demand and, therefore, the makers are short-sighted in booming it as they are. As the fad is in full swing, however, the best way to get rid of it is to let it run itself into the ground. When the high-powered runabout is no longer "swell," it will not be extinct, nobody wants it to be, but it will receive only the attention it deserves.

As to your arguments on the alleged merits of this type, they are a sham and you know it. They may apply to the runabout construction, but that does not justify the retailing on a wholesale basis of road racing machines to be used more or less as such on the roads and streets every day of the week and perhaps twice on Sunday. Also it may not have occurred to you that the seats of a runabout are no more between the two axles than are the front seats of a touring car. Furthermore, the weight of a tonneau, which is not "several hundred pounds," in the sense in which it is apt to be understood, is inconsiderable to a car of 60-horsepower.

And don't you worry about the editor of the "Horseless Age." He and his paper are all right and have the right idea on this question, as on racing and every other question they have ever tackled. The paper is made up of news and unbiased and intelligent comment, and is not guided in its policy by any interest in the "selfish point of view of those who market the article." I am not influenced in this letter by any partiality, as I am not personally acquainted with the editor of the "Horseless Age," and do not read his paper any more than I do some of the other automobile journals. That I am not personally acquainted with him, however, will not prevent me from sending him a copy of this letter.

Cambridge, Mass. DEMAREST LLOYD.

CURRENT CONSUMPTION AGAIN CONSIDERED.

Editor THE AUTOMOBILE:

[561.]—I read with a good deal of interest C. T. Jones' letter on Current Consumption (543), as it seems to bring up a good many interesting points. As a matter of fact, the current required to properly spark an engine for a given time increases in direct proportion as the speed increases. On the other hand, with the ordinary forms of timer and vibrating coils the amount of current consumed by an engine while running a given time will be practically the same no matter at what speed the engine be run.

In some special forms of timers, such as the Atwater-Kent, in which the time of contact per spark generated is the same, regardless of the engine speed, the current consumption increases in direct proportion to the speed of the motor. However, in certain instances the current consumption may actually decrease to a slight extent as the speed of the motor increases.

To illustrate, before the core of a coil is sufficiently magnetized, so that, when a break in the primary circuit is made, a sufficiently strong spark will be created at the plug, the current must pass in the primary for a certain time. This amount of time depends on the construction of the coil and upon the voltage of the current used. Furthermore, the magnetic inertia of the core tends to resist the flow of current in the primary so that the amperage of the current flowing in the primary will gradually increase as the coil becomes magnetized. The time required for the current flow to reach its maximum is somewhere between one one-hundredth and one one-thousandth of a second. Let us now suppose that the primary circuit is broken just as the amperage reaches the maximum, then the average current flow will probably be somewhere near one-half the maximum flow. However, let us suppose that the circuit is not broken until a short time after the current has reached its maximum, then the average amperage of the current flowing will be considerably raised. Let us now apply this reasoning to the case of a non-vibrator coil and the form of circuit breaker that is commonly used on a motorcycle. Let us suppose that the time of contact is so adjusted as to be just sufficient to form a good spark at a given speed. Let us now slow the motor down to one-half that speed. Then the number of contacts in a given time will be decreased just one-half, but the duration of each of these contacts will be doubled so that the total time of contact will remain the same whether the motor runs fast or slow. However, as has been shown, the average current flow has been raised, therefore the total current consumption has been raised by slowing down the motor.

In case a vibrator coil is used, then the situation will become slightly more complicated; however it is practically true in both cases that, with ordinary timers, the consumption of current is the same for a given time, regardless of the speed of the motor. The waste of current at the slower speeds of a motor is something surprising.

Let us say that a motor capable of turning up to 1,200 r.p.m. has a commutator designed for just sufficient contact to give a spark at this speed. Let us suppose that the motor is slowed down to, let us say 400 R.P.M., in this latter case three times the current is being used as is actually needed. Formerly some of the Columbia cars were fitted with a timer in the design of which cognizance was taken of this fact, it being so designed that as the spark was advanced the arc of contact was increased, the idea being that spark advance generally meant increased speed.

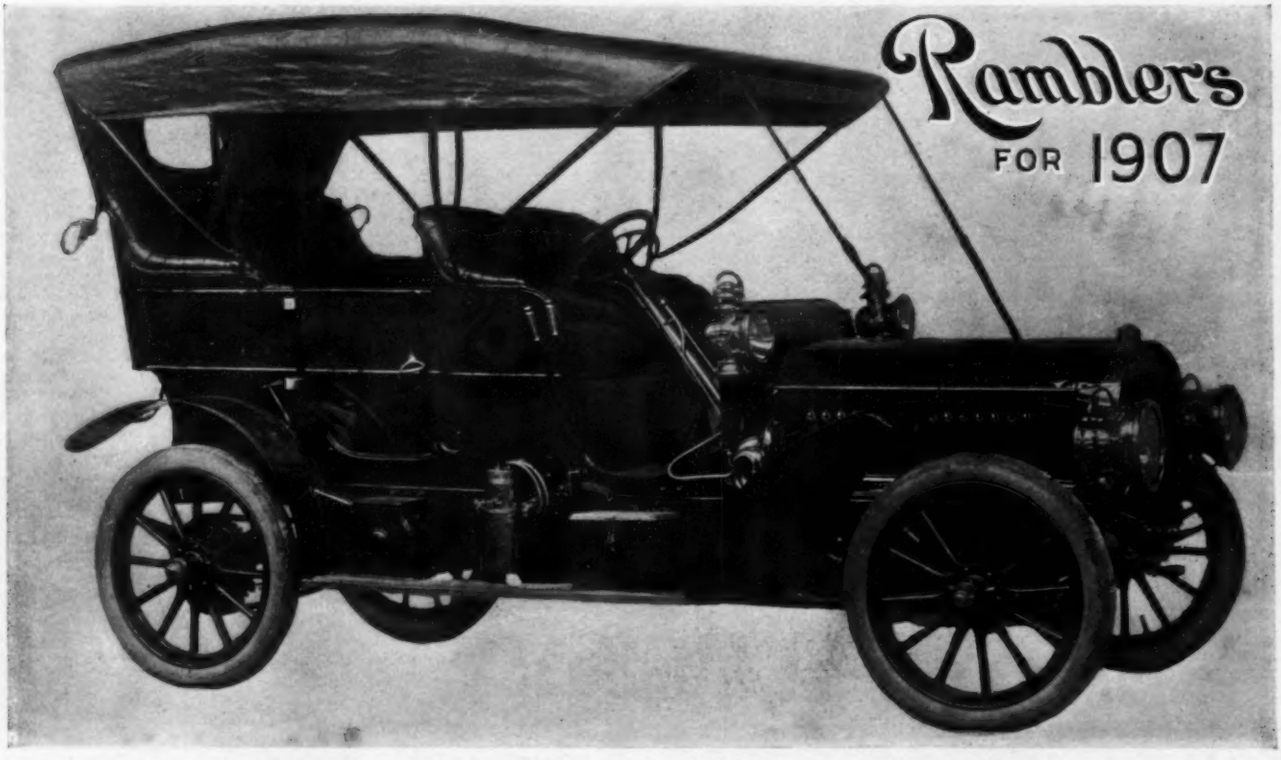
Mr. Jones also makes the very common mistake of confounding battery life with current consumption. A dry battery will give a much greater number of ampere hours' output if the work is of an intermittent nature than if it is more continuous. Both dry and storage batteries tend to give a greater ampere hour output if the discharge rate is kept fairly low. It is probable, therefore, that battery consumption is slightly greater at high speeds than at low in the case of dry batteries, but that with storage batteries there is little or no difference at high or low speeds under ordinary conditions.

HAROLD H. BROWN.

Boston, Mass.

GERMAN MOTORS OFFICIALLY RATED.

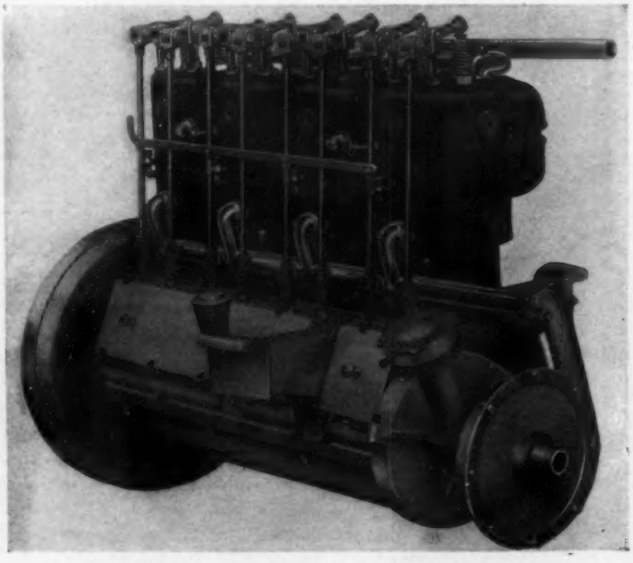
The rating of internal combustion motors has been made the subject of an Imperial Treasury investigation in Germany, and as a result automobile motors are now to be rated by the formula, N equals 0.3 id^2s, in which N is the horsepower, i the number of cylinders, d the diameter of the cylinder, and s the stroke, the quantities being expressed in metric terms. The formula is based on a speed of 900 r. p. m. and a mean pressure of 3.8 kilogrammes per square centimeter. This official formula of the German Government used for levying the horsepower tax has also been adopted by the Automobile Association of Central Europe.



OPERATING SIDE VIEW OF MODEL 25, RAMBLER TOURING CAR, 35-40 HORSEPOWER.

FOR the present year the Rambler line will consist of a double opposed runabout, known as Model 17; a utility car with double-opposed motor, designated as Model 21, and two touring cars with four-cylinder vertical motors, classed as Models 24 and 25. These two latter models are the most important of the Rambler line, and, while similar in general character to Models 14 and 15 of 1906 which they replace, show marked improvements in every essential feature over their predecessors. Model 25 is a large touring car with 112-inch wheelbase and standard tread, while Model 24 is a medium-weight touring car with many new, but thoroughly-tested features.

The four-cylinder motor of Model 24, developing 25-30 horsepower, has separate cylinders 4 1-2-inch bore by 4 1-2-inch stroke, cast with integral heads. The valves, which are assembled in separate cages and securely seated in the dome of the combustion chamber, are operated by rocker arms provided with adjusting screws, whereby the time and extent of opening is accurately regulated. The hardened valve cams are made in integral pairs for each cylinder, one adjustment thereby assuring the action of inlet and exhaust valves in proper relation to each other. The lift rods act through long bronze bearings provided with hardened steel rollers to prevent wear through contact with the cams. Inlet valves being set above the combustion chamber allow room for the spark plugs directly under the valves. By this means the plugs are always cool and clean. Four rings are provided on each piston, three being above and one below the piston pin. Pistons and rings are given a mirror polish. Probably the most notable feature of this motor lies in the construction of the crank case and method of support. Instead of being divided horizontally at the center line of the crank case, the body of the case is built solid with a removable plate at the cam side. This plate covers the entire side of the case, extending downward from the top nearly to the bottom, leaving only a reservoir of oil. By removing this plate, the entire crank shaft, with all its bearings, as well as the cam shaft, is entirely exposed. The main bearings are three in number, of ample size, and of a special anti-friction metal that has such great wearing qualities that adjustment is unnecessary, even after a season's hard service. Three-point suspension is employed for the motor with a universal joint between clutch and transmission gear. At the forward end of the crank case is a sleeve, through which passes a steel tube extending across the frame, the ends supported in trunnion blocks secured to the frame sides. At the rear of the case is a segmental bearing resting on a depending cross frame member.



MOTOR OF MODEL 25, VALVE-OPERATING SIDE.

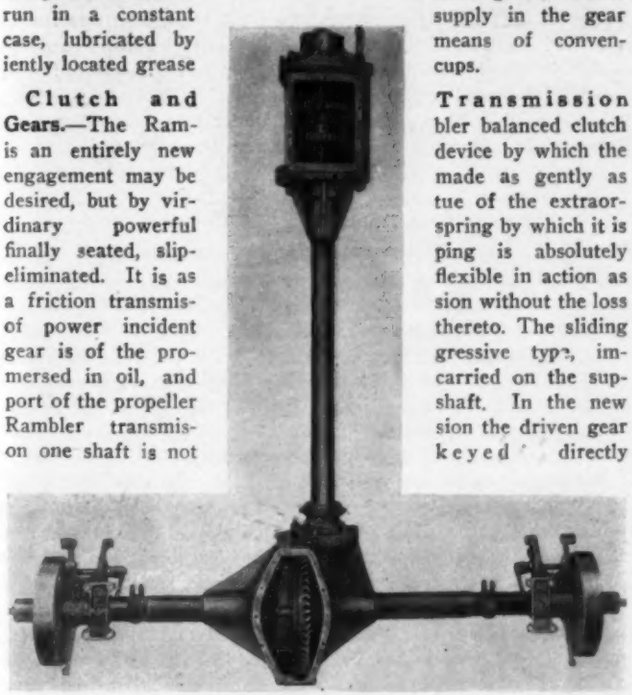
Ignition.—Jump spark ignition is employed, the system comprising a six-volt, sixty-ampere storage battery, a four-unit coil located on the dash, and a roller-type commutator of special design. A leading feature is that the member to which the wires are attached is stationary, even when shifting the spark, thus avoiding breakage of wires and connections. After exhaustive tests the roller contact system has been adopted for all 1907 models. By the use of tool steel rollers and contact plates wear

is almost eliminated, and absolutely correct synchronizing of ignition is attained.

Carbureter.—A new type of carbureter with automatic air control is now used. The gasoline feed is regulated by a float, with the nozzle concentric with the float, thereby removing all trouble incident to throwing the carbureter out of vertical alignment, as in running on a slanting road or steep grades. Air control is by three automatic valves with springs of varying strength. By this construction more accurate air adjustment is assured at different engine speeds than could be attained by varying compression of a single spring. Throttle control is by means of a butterfly valve in the inlet pipe to the motor. The gasoline tank is placed under the front seat, and is reached for filling by removal of the operator's cushion. Its capacity is fifteen gallons.

Lubrication.—The belt-driven, mechanical, force-feed oiler delivers measured quantities of lubricating oil to every point of friction. Parts other than those supplied by this oiler are, except the transmission gears, which run in a constant supply in the gear case, lubricated by means of conveniently located grease cups.

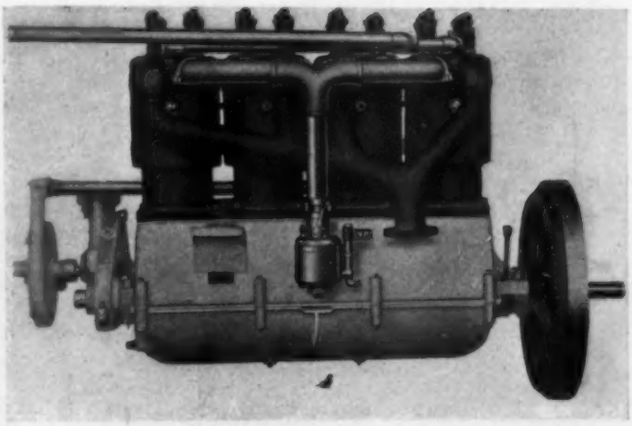
Clutch and Transmission Gears.—The Rambler balanced clutch is an entirely new device by which the engagement may be made as gently as desired, but by virtue of the extraordinary powerful spring by which it is finally seated, slipping is absolutely eliminated. It is flexible in action as a friction transmission without the loss of power incident thereto. The sliding gear is of the progressive type, immersed in oil, and carried on the support of the propeller shaft. In the new Rambler transmission the driven gear is keyed directly on one shaft is not



REAR AXLE AND TRANSMISSION, MODEL 24.

thereto, but is seated on the hub of a driving arm. This driving arm projects through the web of the driven gear with a play of about ten degrees, and allows the gear to yield slightly and permit easy engagement of the shifting gears. The arm is normally centrally balanced by springs projecting from each side and bearing against the shoulders, but when the car is in motion bears solidly against those shoulders in the direction of rotation. The propeller shaft bearings consist of two adjustable roller and one cylindrical bearing. The rear axle is of the floating type, with ball bearings at the inner ends and roller bearings in the wheels. The driving axles are of extra large construction with the spur gears of the differential forged on the inner ends. This construction eliminates the trouble unavoidable in separate gears, whether keyed or otherwise. Hand plates are provided in both transmission and differential gear housings, enabling adjustments to be easily made.

Cooling.—The Rambler engines are water-cooled, circulation being assured by means of a centrifugal pump located on the camshaft. A flat tube radiator is employed, with five-blade fan driven by belt direct from the motor shaft.



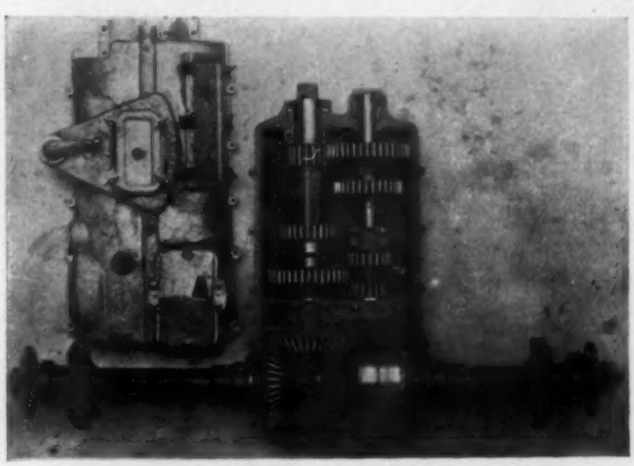
MODEL 25 MOTOR, INLET AND EXHAUST SIDE.

Control.—Motor control is effected by the familiar Rambler ring throttle under the steering wheel used in connection with separate levers for spark and auxiliary air control.

Wheels and Brakes.—Road wheels are wood artillery type, 34 inches in diameter, with 4-inch tires. Standard tire equipment is Hartford-Dunlop, but G & J, or Diamond, are optional. Two sets of brakes are provided, both acting upon drums, in the rear hubs. Primary brakes are applied by pedals; the emergency brakes, of expanding ring type, acting upon brake-drums of each rear wheel, are operated by side lever.

Model 25 is altogether of heavier construction than Model 24. The four-cylinder engine is 5 inches bore by 5 1-2 inches stroke, developing 35-40 horsepower. Change-speed gear is also of the sliding type, giving three forward speeds and reverse, with gears of large diameter, but the final drive is by chain to each rear wheel; the differential gear is enclosed in the case with the sliding gears. The transverse shaft carrying the driving sprockets rotates within tubular sleeves extending outwardly from the gear case and suspended from the side frames by drop-forged supporting blocks.

Bodies.—Both Models 24 and 25 carry handsome, well-finished side entrance bodies, upholstered in the best style, heavily padded with curled hair over ample springs. Model 24 is finished in pearl gray with buff leather; Model 25, beechnut brown with darker trimmings and gold striping, upholstery in black leather. Equipment comprises full cape top with storm aprons, gas headlights, oil side and tail lights, horn, pump, full set of wrenches and tire-repair kit. The catalogue price, thus equipped, is $2,000 for Model 24 and $2,500 for Model 25.



TRANSMISSION OF MODEL 25, WITH COVER REMOVED.

Model 21, known as the utility car, differs in many respects from the two just described. Its power plant consists of a double-opposed engine with cylinders 5-inch bore by 6-inch stroke, carried under the body. The transmission gear is the planetary type located on an extension of the motor shaft and entirely enclosed. The gear case is attached directly to the crank case, and contains the change-speed gear, fly wheel and multiple disk clutch. An integral unit is thus formed, with three-point suspension, and of such strength and rigidity that no torsion of the motor frame can cause disalignment of the gears or bearings. Final drive is by single chain to rear live axle. Ignition is by jump spark; lubrication is by pressure feed with three sight-feed regulators on the dash, oil being carried from these to both cylinders and to the gear case. The engine is water-cooled, circulation being by thermo siphon, with a flat-tube radiator giving about 10,000 square inches of cooling surface. Lack of accessibility has often been urged against horizontal motors carried under the body. In the Rambler no such difficulty is known; every part is perfectly accessible. The body of the car is absolutely independent of all controlling mechanism and is secured to the chassis by means of two lock hinges on each side of the body and outside the frame. By loosening a hand-nut on two of the locks the entire body may be swung to the opposite side and held there by braces; or, by loosening all four hinges, the body may be entirely removed in less time than is usually required for taking out the floor boards.

Convertible Body.—A strictly new design of the convertible type has been adopted for Model 21. The front seat is divided and the tonneau is very roomy with wide doors opening forward. Used as a two-passenger car, the tonneau is replaced by a torpedo deck, or, if an extended tour is contemplated, the deck may be omitted and the floor used for hampers, camping kit, etc. The suspension is by semi-elliptic front springs and full elliptic rear springs with involute ends and double shackles. Wheels are wood artillery type, 30 inches diameter, with Dunlop universal rims and 4-inch tires. Upholstering and finish are of the highest grade. The standard color is an occidental red-brown, with dark-brown trimmings, striped with a narrow gold line. Upholstering is a red that harmonizes with the body color, and all metal trimmings are highly-polished brass. Equipment comprises two headlights, oil side and tail lights, horn, wrenches, oilers, pump and tire-repair outfit. Price, with tonneau, is $1,350; with torpedo deck, without tonneau, $1,250.

Model 17, a runabout with double-opposed engine carried under the body, is the smallest of the Rambler cars, and was fully described in our issue of September 20.

RARITAN BRIDGE TO BE CLOSED AGAIN.

Perth Amboy, N. J., Jan. 28.—The new bridge across the Raritan river at Perthy Amboy, recently opened to the public, will be closed for three months this spring by order of the War Department, and New York automobilists who have been reaching the New Jersey coast resorts by a route leading over this structure will have to resume the old route, by way of New Brunswick.

Three of the spans of the new bridge will have to be torn out and replaced with spans of steel, in order to have the structure comply with the department regulations. The department contends that the bridge, as it is now, is an obstruction to navigation. It has been decided to close the bridge to traffic on March 1. The old route, leading through Newark, Elizabeth and New Brunswick, makes the trip from the metropolis to the seashore towns about thirty miles longer than by the new way.

New Castle county, Delaware, has asked the legislature to permit it to borrow $200,000 with which to build substantial permanent roads within its borders.

NEW YORK-BOSTON AUTO SPEEDWAY.

Boston, Jan. 28.—Among the petitions for new Legislation filed at the State House just before the time for filing new bills expired, was one drafted by James F. Bacon, a Boston lawyer, which asks permission to incorporate the "New York and Boston Automobile Boulevard," for the use of automobiles, motor cars and general transportation purposes. The proposed capital of the company is $2,500,000, and it is desired that the route of the boulevard shall be as nearly as possible an air line touching the following Massachusetts towns and cities: Newton, Brookline, Needham, Dedham, Dover, Medfield, Sherburne, Millis, Medway, Bellingham, Milford, Mendon, Blackstone, Uxbridge, Douglas and Northbridge.

This scheme is supposed to be a part of the general plan for a through line, and the route probably will connect with that proposed by a similar company to be organized in Connecticut, and which will petition the Legislature in that State for similar privileges. It is understood that the promoters of the scheme desire in effect two broad roadways, one for cars going east and the other for cars going west. It will be a toll road, with fees for its use, and entrances every few miles its entire length. The provision in the Massachusetts bill under which the road may be used for "general transportation purposes" is looked upon with some suspicion, as it is feared that under that clause the company might acquire a valuable right of way and use it for a railroad.

Charter Also Applied for in Connecticut.

Hartford, Conn., Jan. 28.—Notice of an intention to file a petition to the general assembly of this State for permission to construct an automobile speedway across the State of Connecticut has been filed with the Secretary of State. The signers of the notice are Col. George Pope, A. L. Pope, W. C. Walker, and Charles E. Walker, of the Pope Manufacturing Company, of Hartford, and E. L. Ropkins, of Hartford. The incorporation which will present this petition is to be known as the Connecticut Automobile Parkway Corporation.

When seen by a representative of The Automobile, Col. Pope stated that the proposed incorporators do not contemplate anything but the construction of an automobile speedway. Politicians are inclined to believe that the proposed corporation intends to secure a charter and then lay trolley or railroad tracks side of the auto speedway in competition to the New Haven road, which has long enjoyed a monopoly in the State. Col. Pope states that the corporation will be nominally capitalized at $100,000. If a charter is secured, work on the path will be started next spring or summer, but it will take several years to complete it.

It is proposed to connect New York and Boston, and the route for the most part will be by private right of way. It is also proposed to run cars at a faster speed than the laws permit on public highways, and to charge tolls to pay interest on the investment and maintain the route. The petition also asks for authority to exercise the right of eminent domain, which gives it the right to condemn and take private land for the construction of the proposed parkway.

SIXTY-MILE AUTO HIGHWAY PROPOSED.

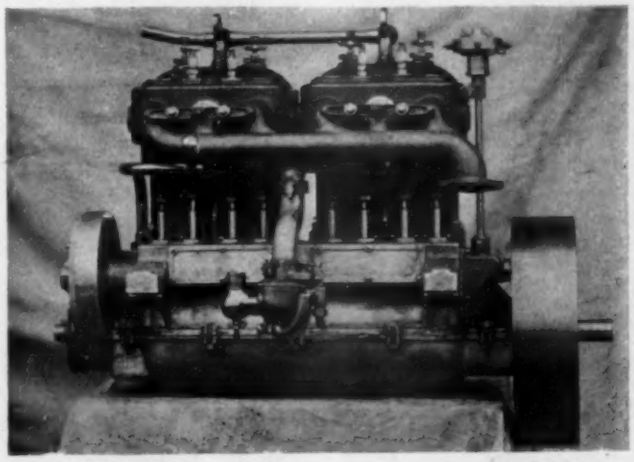
Joining the Bronx concourse and the proposed Catskill Aqueduct automobile highway, so as to make a continuous boulevard sixty miles long from Manhattan borough, New York City, through the Bronx to the Hudson river near Poughkeepsie, is now being discussed by residents of the Bronx. The highway for automobilists would start from the Hillview reservoir, and the concourse, for all vehicles, which is to run from Central Bridge to Mosholu Parkway, could easily be connected with the suburban motor highway. The president of Bronx borough, Louis F. Haffen, is greatly interested in the movement to connect the two systems, and is advocating the plan in conjunction with a number of leading citizens.

ONE of the latest additions to the ranks of popular-priced cars, for which the demand is so large, hails from the middle west. It is called the Kisselkar, and its home is at Hartford, Wis., thus adding another to the growing list of western towns that include automobile manufacturing among their industries. It made its début at the opening of the year and, unless the plans of its sponsors miscarry, it should prove a factor in the trade before the season is well under way. Instead of attempting to place something of a revolutionary nature on the market, its builders have profited by the combined experience of the many designers who have preceded them and have taken heed to avoid the latter's mistakes, so that far from being something in the nature of an "inventor's pet," the newcomer represents as close an approach as possible to what is regarded as standard engineering practice for cars of this size.

Motor.—This follows universal practice in that it is of the four-cylinder vertical type, designed to be placed forward on the chassis under the bonnet. The cylinders are cast in pairs with the waterjackets integral, both the intake and exhaust valves being grouped on the same side. The direct or push-rod type of operation is employed, both valves being mechanically operated and both being interchangeable, beside being very accessible for removal in case of repair. The valves have been given a liberal diameter, thus permitting of a short lift which makes for a highly efficient engine at all speeds, as it insures rapid filling and emptying of the combustion chamber, as well as a very silent-running engine. The connecting rods are drop forgings of high-grade steel, both the big end bearings and the main bearings being of Parson's white bronze, which is very highly regarded for automobile engine work. The single camshaft is completely inclosed and lubricated from the inside in accordance with the latest trend of design in this respect.

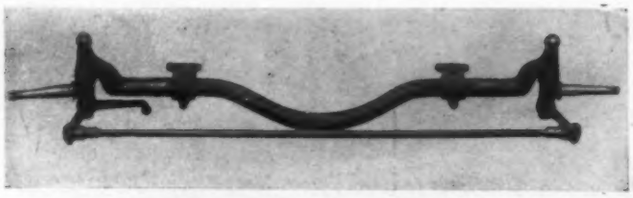
Lubrication.—This essential is well provided for in the shape of a mechanical force-feed oiler driven from the motor and with a number of different leads, feeding directly to the lower edges of the pistons in each cylinder and the front and rear main bearings, the surplus draining into the crankcase, where a constant level is maintained to provide for splash lubrication. Partitions are provided in the crankcase to prevent flooding either end of it with oil when traveling up or down grades. The crankcase is divided horizontally, the lower half being merely an oil pan or reservoir, so that its removal renders all the moving parts of the motor readily accessible with very little trouble. Considerable attention has been given to this where every part of the motor is concerned so that inspection and removal of parts is made easy. The motor is designed to run at speeds varying within a wide range, but develops its normal rating of 30 horsepower at 1,200 r. p. m., at which it is very quiet in operation.

Carbureter.—This is of the well-known Schebler make, with vertical air inlet, and is placed on the left-hand side of the motor quite low down, the inlet manifold being horizontal and fastened directly to the cylinders at the level of the inlet valves. It terminates in a perpendicular downward pointing outlet which is coupled to a special offset with a flanged coupling, bringing the carbureter almost down to the level of the dividing line of the crankcase. The cold water inlet of the circulating system is placed immediately beneath the inlet manifold, so that, as the photo of this side of the motor shows, all the piping necessary is confined to a very small space and is very accessible. The hot water outlet from the jackets rises from the center of the top of each pair of cylinders, circulation being maintained by means of a gear-driven pump.



HOW THE WORKING SIDE OF KISSELKAR MOTOR LOOKS.

Ignition.—The high-tension system of ignition is employed, a set of accumulators being used as the source of current supply. The timer is mounted on a vertical shaft bevel gear-driven from the camshaft. It is placed at the rear of the motor, and is about on a level with the highest portions of the motor, thus making it very accessible and reducing the amount of wire necessary for primary connections. The plugs are situated over the inlet

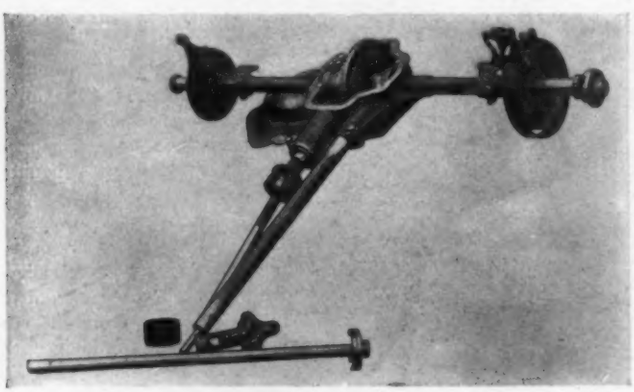


THE FRONT AXLE OF THE KISSELKAR COMPLETE.

valves, which brings them close together on each pair of cylinders and also serves to reduce the amount of wiring necessary on the secondary side of the ignition system.

Transmission.—The change-speed gear is of the sliding type, providing three speeds forward and reverse, the method of operation being the selective, which has met with unusual favor at the hands of designers during the past year or so and is now a feature of a great many cars of all powers. The gears have been designed with very large faces, the teeth being cut so as to permit of a very easy entrance, thus avoiding clashing. They are made of high grade steel, specially hardened and ground to size. Both shafts of the change speed gear run on Timken roller bearings. The rear axle is of the floating type, clutch driven, a spur gear differential being employed. This can be readily removed without the necessity of dismantling the axle, by simply removing the cap of the gear case, which exposes the entire differential and bevel driving gears to view. Timken roller bearings are used throughout this part of the car, two of large size being placed on the pinion shaft, with centers 5 1-2 inches apart, thus insuring absolute alignment at all times. As shown by the illustration of the rear axle driving unit, an unusually large torsion rod is used. It runs parallel with the propeller shaft, and is hung at its forward end immediately back of the change speed gear box, thus preventing any distortion of the propeller shaft. The latter is equipped with a large universal joint at its forward end, in order to prevent its binding from the twisting strains of the car caused by traveling over uneven roads.

Brakes.—As has come to be the almost universal trend of modern practice where this highly essential part of the car is concerned, both sets of brakes have been concentrated on the rear wheels. They are housed in a specially designed drum, the external brake, which is interconnected with the clutch, being operated by the pedal for ordinary running service, while the emergency brake is of the internal expanding type, and is also interconnected with the clutch, thus making it impossible to apply the brake in either case with the power of the motor still being transmitted to the driving wheels. By removing a single small bolt, either the running or the emergency brake may be readily disconnected from the clutch, allowing it to work entirely independent of the latter. In addition to the transmission and the rear axle Timken roller bearings are also employed in the front and rear wheels. A liberal size bearing has been provided in every instance, so that the makers fully guarantee them for two years, and will replace them with new ones should they break or wear out within that time. The foundation of the chassis consists of the standard type of channel section pressed steel frame, the axles being spaced to give a 98-inch wheelbase, the running gear consisting of 32-inch wheels shod with 4-inch tires. The Marsh quick-detachable rim is furnished as a part of the standard equipment, this rim permitting of the employment of the Diamond quick-detachable tire or any standard make of clincher tire. With the usual touring body the car comfortably seats five people, and when equipped with side lamps, horn, set of tools, storage battery, tire repair outfit and pump, it lists at $1,850. The car can also be bought with complete equipment, consisting of a side arm Pantasote top, acetylene headlights, Prest-O-Lite tank, tail lamp and Warner speedometer, with which it lists at $2,100.



REAR AXLE SHOWING ITS KINDRED APPLIANCES.

A ROUTE TO THE JAMESTOWN EXPOSITION.

"White Route Book No. 2," just issued by the touring bureau of the White Company, New York, covers a wide sweep of country that is just now receiving a great deal of attention from automobile tourists. In brief, it gives the most popular—and, in fact, the only practicable—pleasure route for automobiles between the Northern cities and the Jamestown Exposition. The running directions in Route Book No. 2 start from New York across Staten Island, and take the usual route from Perth Amboy to Trenton and Philadelphia. Two practicable routes are outlined from Philadelphia to Gettysburg; one via Lancaster and York, the other via Lancaster, Mount Joy and Harrisburg, these two coming together at Gettysburg.

From this point the run is made from Gettysburg through Waynesboro, Pa., to Hagerstown, Md., and Winchester, Va. Here the route through the famous Shenandoah Valley is taken up and followed to Staunton, where the Valley Road is left for a nearly direct line south-and-east across Virginia, through Charlottesville, Richmond and Petersburg, to Norfolk.

From Hagerstown through the Shenandoah Valley, and all the way to Norfolk, this route is identical so far as the country covered and the points passed through are concerned, with the corresponding trip made by Augustus Post last summer, under the auspices of the Jamestown Exposition authorities and the auspices of the Richmond Automobile Club.

The style of compilation in the two routes varies somewhat, but the White booklet has the advantage of various small photographs, illustrating the important points along the route; it also has a general map, which gives an excellent idea of the route all the way from New York and Philadelphia to the end. It is an enterprising piece of work, and deserves the wide circulation that will undoubtedly be had for it.

PROSPECTS OF THE PENNA. STATE HIGHWAY.

PHILADELPHIA, Jan. 28.—The many advocates of a trans-state highway among the automobiling element here were somewhat taken aback at the announcement that State Senator Blewitt, of Lackawanna county, would introduce a resolution in the Legislature asking for a survey by the State Department of Highways of a route for a 32-foot-wide macadam boulevard from Easton to Pittsburg via Sunbury, with branches to Scranton and this city. They greatly fear that the division of sentiment between that route and the one generally accepted—via Lancaster, Gettysburg, Bedford, Greensburg, etc.—may result in a knockout for both. The latter, besides being the shorter, has fewer physical difficulties in its way, and could be constructed for considerably less money. Certain it is that the solons now in session at Harrisburg will not listen to a double route across the State, and there is reason to fear that the legislators will adopt the usual compromise of killing both as a sure method of side-stepping possible antagonism. Under the circumstances the prospects for the highway are far from encouraging at the present session.

BY
FRANCIS MILTOUN

(*Continued from last week.*)

SO much for the hotels of the large towns; they can't give you for a moment anything like the good cheer and the good feelings which possess you after you have been a guest of the Hôtel de la Poste at Tournon, the Hôtel de France at St. Girons in the Haute Pyrenées, the Hôtel Lieutaud Cassis in the Var, or the Hôtel du Bon Laboureur at Chateaudun, where at any or all of these you are launched at once in the midst of a locally characteristic atmosphere with the *patron-chef* cooking your dinner for you and his buxom wife running the cash box in that strictly personal way which forms one of the great and intimate charms of French travel.

It is in such hotels as these that one gets a genuine warm welcome and a hearty hand-shake on leaving, the personnel meanwhile not hanging about cadging for sous, even though the *bonne* has brought you innumerable jugs of *eau chaude*, and the *marmiton* and *garçon-de-remise* has fussed around with you and the machine while you were filling up with essence, oil and water. No, you give what you like, four sous here, fifty centimes there, and five sous there, and everybody satisfied.

It is in such hotels as these that one finds a mixed company of petty bourgeois, good, honest and simple folk all, and very exacting nevertheless with regard to their food and its cooking. When madame puts her head through the door of the café and says, "Allons, messieurs, à table," you file in and take your places ensemble; an army officer or two, perhaps an abbé, a local lawyer and his client, and three or four *commis-voyageurs;* very, very seldom any women folk.

Just recall the succulent *soupe aux choux*, the delicious *friture* (the little fish from the river just before the door), the inevitable *ragout* of something or other—wasn't it good? and the *rôti*, a duckling perhaps or a *pintard*, with a crisp salad with just a suspicion of garlic in the dressing (sometimes a trifle more), and a dish of *petits pois au naturel* (not the green, coppery kind specially put up for the English and American markets). Then there was the wine, a *vin de Vouvray*, perhaps, if in Touraine, or a *vin de St. Peray*, if on the banks of the Rhône; just ordinary *vin de table*, but *il n'était pas mal.*

A pointer, then, for stranger tourists en automobile in France: stop at some small town for déjeuner, or dinner, and the night instead of in the large towns, and get a taste of the real *cuisine du pays*, a rare, succulent thing which knows not "Liebig," aluminum and electric cooking utensils, or unpronounceable Russian names for the plats; stop at Tournon instead of Lyons, at Cassis instead of Toulon, at Blaye instead of Bordeaux, and at Les Andelys instead of Rouen.

The same thing applies all over France. Pick your hotel from the Guide-Michelin or the Annuaire of the Touring Club de France or the Automobile Club de France, and not from Baedeker or Murray. Another thing, if you travel with Baedeker as a guide, supplement it with Joanne, in French. Even if you don't read French it will be of untold value from an automobilist's point of view. For proof of this just compare Joanne's Normandie with Baedeker's Northern France and see what you gain with the former as to maps and plans and hints on the serious business of travel in that delectable province of old France.

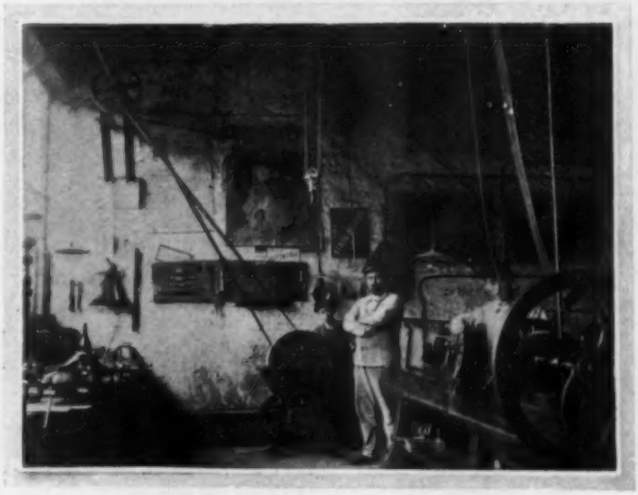
A frowsy little hotel off the beaten track, with nothing of the Ritz-cum-Carleton about it, will leave a far better memory of its simple characteristic fare than the imitation Escoffier and Brillat-Savarin *plats* of the de luxe hotels, which in France, even, are the same dishes as in de luxe hotels elsewhere.

As for hotel prices, the whole continent of Europe is much cheaper, and the fare is much better, than one gets in England. It is not snobbery to decry the English resorts and say how much one prefers Ostend to Brighton, St. Jean-de-luz to Bournmouth, or Marienbad to Buxton; there is a difference—a wide difference—which need not be specialized.

It is by the mark to abuse English cookery; the grill is one of the sanest and most healthful forms of cookery extant, and the roast beef in England is proverbially good—when it *is* roast beef and not baked meat, and when it is not horribly hacked and butchered in the serving. All the same the hotel meals of England, even in the best of the resorts, are dreary, sad affairs with impossibly cooked French *plats* and a generous sprinkling of plain boiled as well. To take one item alone, a roast chicken, it is only in France that one can get a decent *poulet rôti.*

One thing to bear in mind, however, that the "resort" hotels the world over are perforce expensive and do not differ greatly—so far as the premier establishments go—and whether one is in the Engadine or on the Cote d'Azur, the Cote d'Argent, or the the Cote d'Emeraud: the final tinge is golden and of a rich hue. Closely allied with the hotel which caters for the wants of the automobile traveler are the establishments which can render a service to one's automobile as well—the repair man or *mécanicien*, as the Frenchman knows him.

The garage accommodations of the hotels themselves, the



ONE FINDS THE MECHANICIAN ALL OVER FRANCE.

LES ANDELYS CHAMPTOCEAUX. ORLEANS.

THREE KINDS OF HOTEL GARAGES IN FRANCE.

actual storage places for your automobile for the night, are nearly everywhere all sufficient, and in some cases palatial, as at the Hotel de l'Univers at Tours, the Grand Monarque at Chartres, or in most of the large towns, such as Arles, Nimes or Avignon, at Remis, Bourges or Rouen. In the smaller towns one very often has to house the machine in an old stable, perhaps sharing it with the hotel omnibus, but in almost every instance some special effort has been made towards furnishing proper accommodation, so far as freedom from danger and a safe, dry place for storing one's machine is concerned. This is a good deal and more than you get in England, and in France you furthermore pay nothing for this accommodation. Remarkable this, many will think, but a very astute and intelligent move on the part of the French hotel keeper who would cultivate a new clientèle rather than drive it away, as more than one hotel proprietor in England is doing to-day. One does not think it a fair proposition to be charged a shilling or eighteen pence for leaving his machine in the uncovered courtyard of a hotel while he and his three companions are spending a guinea on a lunch.

The repair man, or *mécanicien*, even with the best regulated automobile families, is a necessity at times, and at other times a great accommodation. Your carbureter may have to come down—for a good and sufficient reason which you know well enough—and you had much rather someone else would do the job than bother with it yourself. A drop of solder on the *flotteur* is all that is needed, but it's an hour's dirty work getting at it and putting it back in place again. This will probably cost you a franc and a half (say thirty cents), and is not dear at the price.

You may have stripped a thread on a bolt and it is desirable to have another to replace it immediately. Your French *mécanicien* sizes up the situation in a moment and sees that you have an English or an American machine—and the threads are not metric. He doesn't attempt to do a "gas-pipe job," as do most of his brethern in England, but takes the bolt out bodily and turns down, perhaps, a large French bolt to the proper size, with its nut and thread all made, puts it in place and off you go at a cost of—well, a mere nothing. If this procedure is not wholly practicable, he will even turn you a nut with a "Whitworth," a "Standard," or any other thread (and he will do it on an American lathe, too—which he calls a *tour*). This is an art. One thinks almost as great an art as that which accomplishes the multifarious operations of the watchmaker, and it takes a fair bit of time, but it won't cost you over a dollar and probably not that. Yes, the *mécaniciens* of France are a rare race of workmen. This is another of the pleasures of touring in France.

American Automobiles on the Roads of France.

Nowadays one sees not a few American automobiles on the roads of France. In a journey of last summer from a little Breton fishing village to another unspoiled little town near Marseilles, a little Oldsmobile was met gliding gently along a great tree-bordered *route nationale* in the midst of the plain of La Beauce; and within half a day a fifty-horse Thomas, and on the road by the Rhône, below Valence, a Pope-Toledo, and again a Pierce. It is the Americans, of all stranger automobile tourists, who are most frequently seen in France.

It was unquestionably remarkable that four American automobiles should be seen in succession, on such a cross-country run as this, but such is the fact, and it is the more remarkable because for one whole day, while skirting the "Massif-Centrale" (that volcanic region around Le Puy and Clermont-Ferrand) and the mountains of the Vivarais, not a mechanically propelled vehicle of any kind was seen, except a motor-omnibus of Lyons manufacture being "tried out" as to its fitness of the work that it was intended to perform. They had chosen a likely spot for the trial, for it was on an eighteen kilometer "hill" just outside of Roanne in the Haute Loire.

That night we slept at Lyons, at the Hotel de l'Univers et de l'Automobilisme, and paid our bill the next morning with every content as to accommodations and price, though there was added to the bill ten per cent. in lieu of *pourboires*. This was a novelty and it seemed to work well. Everybody satisfied: clients, servants and proprietor. But it must have taken a lot of nerve for the proprietor to cut loose from established custom.

APERITIF TIME IN FRANCE

PHASES OF BUSY AUTOMOBILE CLUB LIFE

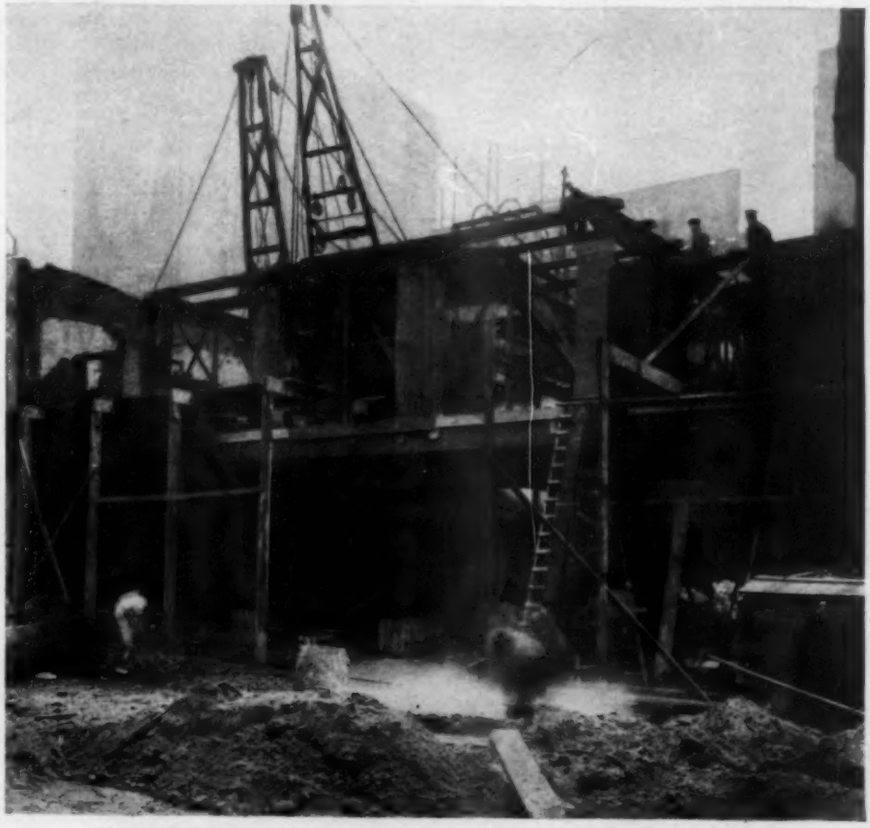
A. C. of California Urges Careful Observance of Law.

SAN FRANCISCO, Jan. 22.—As a sample of the sensible work the executive committee of the Automobile Club of California is doing to popularize automobiling in this State, and ward off restrictive legislation, the following letter, recently sent out to automobile dealers in the State, stands out pre-eminent. The letter is given in full, and is worth careful consideration:

"As you are aware, frequent automobile runs have been made between San Francisco and Los Angeles, with the view of establishing so-called 'records.' While these runs have sometimes been made by privately owned cars, they have always been instigated and managed by dealers, with a view to advertising some particular make of machine, and thus furthering personal interests only. You cannot be unmindful of the fact that almost any of the present makes of machines, and certainly all of the goodly number of the best of them, are capable of making the average speed necessary to equal any 'record' possible under highway conditions, such a 'record' being merely a matter of skillful operation coupled with a fair amount of good fortune against ordinary roadway troubles. Such runs prove nothing else.

"In thus attempting to further purely selfish ends, participants in these runs willfully violate the State law applying to the use of the highways by automobiles, endanger the lives and property of highway users in general, and bring discredit and odium upon all automobile owners and users. It was through the efforts of the officers of this club that our present highway law was passed, and it is therefore felt to be incumbent upon the club to attempt to enforce the spirit of the law at least, and with that object in view a letter has been addressed to the Boards of Supervisors and the District Attorneys of several of the counties of the State, a copy of which is enclosed for your complete information. No class can be more interested in the continuance of our present law, or one having no greater restrictive measures, than automobile dealers, as large sales of cars depend greatly upon the purchasers' ability to freely use them without too restrictive conditions, and it would therefore seem dealers should be first and foremost in advocating the legal and rational, and not criminal, use of public thoroughfares."

As a general thing the public commends the club's action.



HOW THE CHICAGO AUTOMOBILE CLUB HOUSE LOOKED JANUARY 15.

The open winter has benefited the builders of the new palatial home of the Chicago Automobile Club, and the third story is now in progress. The illustration is from the official club "Journal."

Spring Endurance Run Interests Central Penna. Autoists.

YORK, PA., Jan. 28.—At a meeting of the York County Automobile Association, held the other day, it was decided to purchase an individual tag to be placed on the cars. The tags will bear the inscription "York County Automobile Association," and the member's individual club number will appear on the tag below the above marking. The proposed State highway between Pittsburg and Philadelphia was also discussed by the members, and they are heartily in favor of such an improvement being made to the big auto road. Quite a few new members were admitted at the last meeting.

This city will be the chief checking station in the endurance run to be held April 8 and 9 by automobilists from this part of the State. The run will leave Harrisburg on the morning of April 8, and will proceed to Hummelst, Palmyra, and Annville to Lebanon, the first checking station. From Lebanon the cars proceed to Manheim, Lancaster, Marietta, Columbia, and then to this city. The night's stop will be made in York. The second day's run will take in Hanover, New Oxford, Gettysburg, Chambersburg, Shippensburg, Newville, Carlisle, Mechanicsburg, and thence to Harrisburg, where the final checking will be made. Two valuable trophy cups have been offered to the winners in the touring car and runabout classes. Many local tourists will compete in the run, and from present indications no less than twenty-five cars will be sent away from the Capital City on the morning of April 8, and probably twice that number.

Smoky City Autoists Plan a Busy Season.

PITTSBURG, PA., Jan. 28.—The Automobile Club of Pittsburg is taking on new life. Interest in the Pennsylvania Motor Federation has aroused new popularity for the Pittsburg organization, and its officers are now planning a series of events which will make the club a busy organization the coming season. The officers of the club, in conjunction with the Automobile Dealers' Association, have arranged for a series of lectures by experts from the various factories on the engines and parts of the different cars most used in Pittsburg. Endurance contests and road runs are also being planned for the spring and summer, and it is

proposed to extend the good roads campaign as fast as possible. At the last meeting of the club these officers were nominated to be voted on at the annual election February 18: President, George E. Turner, William N. Murray, Edward Kneeland; first vice-president, Phillip S. Flinn, George E. Painter; second vice-president, William N. Murray, E. J. Kent; third vice-president, Frederick Byers, W. A. Heyl; secretary, Paul C. Wolff; treasurer, George G. Glass; governors of the club, five to be chosen, Dr. J. A. Hawkins, Phillip S. Flinn, George E. Turner, William P. Baum, John C. Bragdon, C. M. Miller and William L. Dixon.

Capital City's Club Inaugurates Series of Smokers.

WASHINGTON, D. C., Jan. 28.—The spacious clubhouse of the Automobile Club of Washington was thronged with members and guests on the night of January 24, when the first of a series of smokers was given. More than two hundred cars were parked in front of the club house during the evening. President Caverly, Secretary Mark and Frank C. Berens had charge of the arrangements, and they carried out the details in a manner that won them much praise. During the evening a vaudeville entertainment was provided, several members of theatrical companies playing in Washington furnishing the bulk of the "stunts." A lot of new motion pictures of decided interest were also displayed. A buffet supper was served in the upper rooms.

Members of the Automobile Club of Washington are greatly interested in the proposed efforts of the District Commissioners to secure the enactment of a police regulation requiring all vehicles, whether used for business or pleasure purposes, to carry lights after dark. Some years ago the club made a determined effort to secure this legislation, but such a howl went up that the effort was abandoned. It is pointed out that many accidents occur on account of no lights on wagons and carriages after dark, and the commissioners believe that conditions now warrant some action along the line indicated.

Charleston Autoists Will Form a Club.

CHARLESTON, S. C., Jan. 25.—This city is about to have an automobile club, preliminary steps to organization having been taken at meeting just held at the rooms of the Commercial Club. A committee of five, consisting of J. M. Connelley, Norman H. Blitch, E. W. Hughes, Dr. R. S. Cathcart, and M. B. Paine, was appointed to draft a constitution and set of by-laws, and prepare a plan for permanent organization which will be consummated at a meeting to be called in the near future.

Philadelphians Hear Lecture on Carbureters.

PHILADELPHIA, Jan. 28.—Over 150 members of the Automobile Club of Philadelphia gathered at the club house, 1409 Walnut street, last Saturday night to listen to a lecture on "Carbureters," by Prof. Charles E. Lucke, of Columbia University. After the lecture there was a short discussion of the merits of alcohol as a fuel and the best form of carbureter to use therewith. A banquet wound up the evening's entertainment.

CLUB DOINGS IN GENERAL.

WILKINSBURG, PA.—The Wilkinsburg Automobile Club has joined the Pennsylvania Motor Federation.

WILMINGTON, DEL.—After a long lapse of inactivity the Wilmington Automobile Association has met and discussed plans for the coming season. There was no significant action taken at the meeting, but renewed activity is expected.

PHILADELPHIA.—The Automobile Club of Germantown will hold its annual dinner Friday evening, February 9. Robert P. Hooper, chairman of the Highway Improvement Committee of the A. A. A., heads the club's guest committee, and will act as host for the occasion.

BROOKLYN, N. Y.—A. R. Pardington, chairman of the good roads committee of the Long Island Automobile Club, has chosen as fellow committee members H. S. Fullerton and Alexander Schwalbach, and the appointments have been confirmed by President Richardson.

LOS ANGELES, CAL.—Good work has been accomplished by the Automobile Club of Southern California this winter. The road to Santa Barbara from this city has been adequately equipped with enameled danger and guide signs, and the inland San Diego road has had a large number of the signs put into position.

YOUNGSTOWN, O.—Plans are being made by automobilists of Youngstown and Marietta to organize auto clubs in both cities. A. D. Thomas, of Youngstown, and L. L. Peddington, of Marietta, recently visited Cleveland, for a consultation with Secretary Asa Goddard, of the Cleveland Automobile Club, and both prospective organizations will accept the Cleveland club as a model.

NEW YORK.—At the last meeting of the board of directors of the New York Motor Club it was decided to place in operation initiation fee clause of the by-laws commencing March I. A committee was appointed to arrange changes in the by-laws of the club, intended to simplify the executive work of the organization and at the same time widen its power for activity in many lines, such as legislation, good roads, contests, tours, etc. It is probable that the number of directors will be increased from nine to fifteen. A. G. Batchelder was elected first vice-president of the club, and will represent it on the governing board of the New York State Automobile Association. President Stevens has been named on the directorate of the A. A. A.

FIRST YEAR OF THE JERSEY LAW.

TRENTON, N. J., Jan. 28.—J. B. R. Smith, commissioner of motor vehicles for New Jersey, has submitted to Governor Stokes his report of the workings of his department since its creation under the Frelinghuysen law of last winter. One of the most perplexing questions with which the department has had to deal is the proper identification of vehicles. The report says that the ideal identification would consist of some device that can be plainly seen under any conditions of light or darkness from any reasonable distance or angle. Interstate registration has received attention, the proposition being made that each State accept the identification marks of the others, as, for example, a car registered in Pennsylvania with the mark 5000 Pa. would be given the same number in New Jersey and other States agreeing to the proposition. On the personal examination question the department finds a wide difference of opinion. It concludes that the personal examination accomplishes no good purpose, and might be superseded by an age limit, a declaration that the applicant is physically and mechanically competent to drive, and that he is acquainted with the automobile laws of the State. Contrary views also prevail on the speed limit, Commissioner Smith having a decided leaning towards a general proviso which prohibits any person driving a motor vehicle at a greater speed than is reasonable, having regard for the traffic and use of highways. Neither is the commissioner in sympathy with the suggested maximum gears, believing that the ease with which any gears can be altered would make it impractical from a mechanical viewpoint. Other suggestions are compulsory lights for all road vehicles; the trial of automobile offenders before a Court of Common Pleas, or some special court; provision for appeals in the matter of revocation of licenses and registration certificates; and more uniform and united action among the different police forces.

BELGIUM OPENS ITS NATIONAL SHOW.

BRUSSELS, Jan. 20.—Surrounded and escorted by staff officers, Prince Albert of Belgium officially opened the national automobile show in the Palais du Cinquantenaire. Being under the direct patronage of the King of Belgium, himself an enthusiastic automobilist, the opening had all the éclat of a Court ceremony: grenadier guards in full dress uniform, staff officers, members of the Government, industrious little Belgium's leaders of industry, in regulation dress suit, and not a small number of fair dames made up a brilliant group. Prince Albert has more than a smattering of automobile knowledge, and in his three hours' ramble through the big palace showed a deep interest in the leading national models. As an indication of the Prince's automobile enthusiasm it is interesting to recall that ten or twelve years ago he bought the first De Dion gasoline tri-car which ever appeared in Belgium; the machine had as strenuous a life as ever a De Dion knew.

Minute attention has been paid to the decoration and illumination of the hall, the effect being pleasing, notwithstanding that ten thousand of the 32,000 electric lamps refused to light up on the opening day. In very many cases French exhibitors have transported their handsome Paris stands to the Brussels exhibit, a fact which is very gratifying to the Belgian public.

Belgium constructors predominate, naturally, but French builders are present in large numbers; Germany and Italy are adequately represented; other countries have only one or two firms each. The home industry gives signs of rapid progress during the past year, the industrial motor especially receiving an enormous amount of attention at the hands of both builders and users. In general the Belgian automobile industry has followed very closely in the wake of France; but in the matter of light and heavy delivery vehicles the little royalty early forged ahead of its republican neighbor, and still maintains her lead.

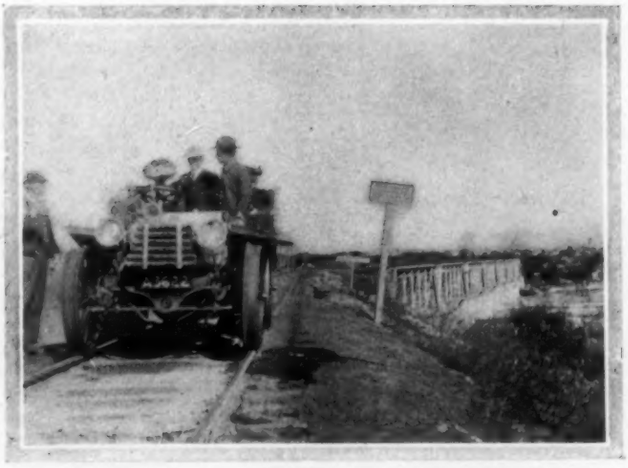
Considerable attention is being given to the automobile for army purposes, and a delegation of staff officers will follow and report on the heavy vehicle competition to be held next April.

EARLY ENTRIES MADE FOR GRAND PRIX.

PARIS, Jan. 19.—Contrary to previous experience, entries for the Grand Prix race, to be held in June or July next, are being made early by French constructors. Already $19,000 have been handed over to the sporting commission as entrance fees for three Bayard-Clement, three Darracq, three Motobloc, and one Corre, three Panhard-Levassor, three Lorraine-Dietrich, and three Renault machines. Of these the Motobloc and Corre are the only firms which have not figured in previous important long-distance road races. The Motobloc racers will have all the distinctive features of the firm's standard touring machines, will not develop more than 100 horsepower and will not weigh more than 2,200 pounds. It is expected that three Brasier, three Hotchkiss and two Civelli de Bosch machines will shortly be engaged, bringing up the French competitors to twenty-seven. Foreign firms have not yet shown themselves interested in the race, but Mercedes, Fiat, Itala, Rolls-Royce (British) and Germain (Belgian) are regarded by the club officials as almost certain starters. Thus the total number of competitors will be from thirty to thirty-five. No decision has yet been arrived at regarding the exact date of the race or the circuit on which it will be run. From some twenty or thirty, the list of suitable circuits has been cut down to four, each of which is being enthusiastically boomed by its not uninterested partisans. At present the Seine-Inférieure course is in the ascendancy. Starting from Dieppe it follows the coast line to near Mers, descends south to Londinières, and runs up to Dieppe again, forming an equilateral triangle of about fifty miles. Its rivals are the Eure, Marne, and Aisne districts, each with courses averaging 55 miles. With a possibility of thirty entries for Grand Prix No. 1, and twice that number for Grand Prix No. 2, an exceptionally wide circuit is essential. The members of the Sporting Commission find a choice very difficult.

Although official regulations are not yet out, three Gillet-Forest machines have been entered for Grand Prix No. 2. This event will be run the day after Grand Prix No. 1 on a fuel allowance of 3.3 gallons per 62.1 miles.

IMPOSING VIEW OF THE BRUSSELS AUTO SHOW FROM ONE OF THE END GALLERIES OF THE PALAIS DU CINQUANTENAIRE.



ACROSS THE RIO GRANDE INTO MEXICO, LAREDO, TEXAS.

ONE TYPE OF MEXICAN HOME THAT IS FREQUENT.

IN MEXICO WITH MR. GLIDDEN.

After 5,022 miles of safe and enjoyable travel since November 1, the date of departure from Boston, Globe Girdler Charles J. Glidden's Mexican trip came to a sudden stop December 31, when within fifty miles of the ancient city of the Aztec kings. After leaving Chicago, on November 22, Mr. Glidden and party used the railway tracks, his Napier car being fitted with special wheels with flanges, and his auto had the same status with the railroads over which he passed as a special train. He passed the Mexican border over the railway bridge at Laredo, Texas, and continued his journey southward toward the City of Mexico, which he figured would be reached the day before New Year's.

The story of the wreck of the car is best told in Mr. Glidden's own words: "We were running twenty-eight miles an hour," he says, "on a straight track, when a rock wedged in between the main track and a guard rail was struck by the flanges of the left wheels, and we jumped the rails and ran about ninety feet. The forward wheels collapsed and we were all spilled out, but no one was injured. Had not the wheels collapsed the car would have run up on a bank, overturned, and undoubtedly buried us all underneath, with serious results. I tapped the telegraph wire, put on a set of instruments that I was carrying, and immediately opened up communication with the train dispatcher at Mexico City, securing assistance in a short time in the shape of a special train. We arrived in the City of Mexico on the time planned, December 31."

Mr. and Mrs. Glidden have returned to Boston, and will continue their world's tour upon the completion of repairs to the car, which has been shipped to the Napier factory in England. They will resume their journey at Port Said, in Egypt, to which point, at the entrance of the Suez canal, the car will be sent when repairs have been made.

PENNSYLVANIA AUTOISTS ARE HOPEFUL.

HARRISBURG, PA., Jan. 28.—Improvements in automobile legislation are being sought by the Pennsylvania Motor Federation. The changes contemplated include more elastic speed law regulations, especially in country districts, where the present law is unnecessarily stringent; greater license for automobilists, with a strict accountability for offenses; a reciprocity between automobilists from other States, whereby visitors will not be required to take out a new license before touring through Pennsylvania, providing the State from which he comes extends the same privilege to Pennsylvania. State Highway Commissioner Hunter has included these proposals in his annual report to the State Legislature.

A BILL TO TAX AUTOS IN CONNECTICUT.

HARTFORD, CONN., Jan. 28.—A bill to tax automobiles annually $1 per horsepower was introduced last week in the senate of the general assembly. This will apply only to cars registered in the State of Connecticut. The bill has been referred to the committee on rivers, roads and bridges. The proposed taxation measure has the endorsement of the Farmers' Association of the State, which always wields a strong influence in the general assembly, and there is a possibility of it being favorably reported.

9,000 FEET ABOVE SEA LEVEL ON MEXICAN RAILWAY.

WRECK OF GLIDDEN CAR, 50 MILES FROM THE CAPITAL.

THE AUTOMOBILE CALENDAR.

AMERICAN.

Shows.

Feb. 2-9.....—Chicago Automobile Show, Coliseum and First Regiment Armory. S. A. Miles, manager.

Feb. 11-16.....—Detroit, Mich., Sixth Annual Automobile Show, Light Guard Armory, Tri-State Automobile and Sporting Goods Ass'n. E. E. McMasters, mgr.

Feb. 18-23.....—Buffalo. Fifth Annual Automobile Show, Convention Hall. D. H. Lewis, manager, Teck Building.

Feb. 18-23.....—Cleveland Automobile Show, Cleveland Automobile Trade Association. George Collister, manager.

Feb. 18-25.....—San Francisco, Golden Gate Park Skating Rink. Automobile Show, Dealers' Association and Automobile Club of California.

Feb. 25-Mar. 2..—Portland, Me., Second Annual Automobile and Power Boat Show, The Auditorium.

March 2-9.....—Chicago, Second Annual Power Boat Show, Seventh Regiment Armory. W. C. Andrews, manager, 19 E. Huron St.

March 2-9.....—Minneapolis, Automobile Show, First Regiment Armory, Minneapolis Automobile Dealers' Ass'n.

March 4-10.....—Kansas City, Mo., First Annual Automobile Show, Convention Hall. Frank L. Woodward, manager, Willis Wood Theater Building.

March 9-16.....—Boston Automobile Show, Mechanics' Hall and Horticultural Hall, Boston Automobile Dealers' Association. Chester I. Campbell, manager.

March 13-16....—Omaha, Auditorium, Second Annual Automobile Show, Omaha Dealers' Association. T. Gillian, manager.

March 18-23.....—Providence (R. I.) Automobile and Power Boat Show, Infantry Hall. F. M. Prescott, manager.

April 1-6.....—St. Louis, Mo., Automobile Show, Jai Alai Building, St. Louis Automobile Dealers' Association.

April 6-13.....—Montreal, Canada, Second International Automobile and Sportsman's Exhibition. R. M. Jaffray, manager, 309 W. Notre Dame Street.

April 8-13.....—Pittsburg, Pa., First Annual Show of the Pittsburg Automobile Dealers' Association, Duquesne Garden.

Race Meets, Hill Climbs, etc.

May 30 .....—Philadelphia, Hill Climb, Quaker City Motor Club.

Oct. 19.....—St. Louis, Mo., International Aerial Race for the Gordon Bennett Prize. Aero Club of America.

Motor Boat Races.

June 8.....—670-Mile Ocean Motor Boat Race, New York to Bermuda. Motor Boat Club of America and Royal Bermuda Yacht Club.

Sept. 2-6.....—Jamestown (Va.) Exposition, Motor Boat Races.

FOREIGN.

Shows.

Jan. 25-Feb. 2..—Liverpool Motor Show, Tournament Hall.

Feb. 1-9.....—London, Crystal Palace Motor Show.

Feb. 16.....—Turin, Italy, Automobile Show.

March 1-16.....—London, Olympia Commercial Vehicle and Motor Boat Show.

April 6-13.....—London, Agricultural Hall Motor Show.

May 4-15.....—Madrid, Spain, Automobile Exhibition, Palace of Fine Arts, Royal Automobile Club of Madrid.

May 15-26.....—Zurich, Third Annual Swiss Automobile Show.

Race Meets, Hill Climbs, etc.

Feb. 23-27.....—Voiturette Contest, Automobile Club of Italy.

March 20-27....—Nice (France) Automobile Week.

April 1-15.....—Spring Wheel Competition.

April 21.....—Targa Florio Tour (Sicily), Auto Club of Milan.

April 25-28.....—Touring Contest, Automobile Club of Touraine.

April 28.....—Chateau Thierry Hill Climb.

May 24-27.....—Voiturette Contest, Automobile Club of Austria.

May 29-June 1..—Irish Automobile Club Reliability Trials.

June 3-12.....—Herkomer Cup, Automobile Club of Bavaria.

June 14.....—German Emperor's Cup, Taunus Circuit, Imperial Automobile Club.

June 24-29.....—Scottish Reliability Trial, Scottish Automobile Club.

June 25-July 8..—Grand Prix, Automobile Club of France. (Exact date to be decided upon.)

July 14, 1908....—Paris to London Aerial Race.

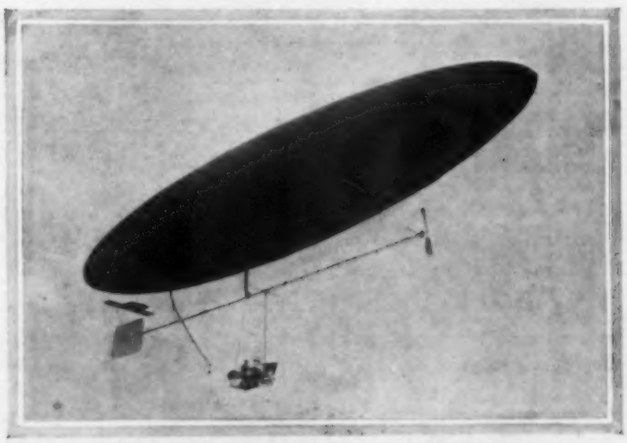
Aug. 11-20.....—Coup d'Auvergne, France.

Aug. 18-22.....—Ardennes Circuit (Belgium) and Coupe de Liedekerke.

PARIS TO LONDON AERIAL RACE.

PARIS, Jan. 20.—Flying machines being the latest things in existence, it was not to be supposed that the enterprising, competition-organizing Parisian journal *Le Matin* would remain indifferent to their development. Paris to London by balloon, for a grand prize in cash of $50,000, twenty thousand of which were given by *Le Matin*, and $10,000 each by the Marquis de Dion, M. Clément, of automobile firms, and M. Charley of Mercedes interests, was announced a few months ago. Plenty of time has been taken to study conditions, and it is only to-day that the official regulations have been made known. The big prize will be given to the proprietor of the machine traveling from Paris to London under its own power in the shortest time, where there are several competitors, or in any case within a 24-hour limit. The distance being about 220 miles, a minimum speed of over nine miles an hour will have to be maintained. Mishaps en route appear to be considered possible, for the regulations stipulate that the machine and its pilot must finish together. One finishing without the other will disqualify.

Whatever the weather conditions the first start will be made on July 14, 1908—the French national fête day. If the prize is not won, other starts will be made on the second Sundays in August, September, and October. Descents may be made during the journey for filling gasoline tanks and taking up stores, but no outside propulsion aid must be given the machines. Arrival will be made by dropping a seal within a circle of 82 feet from a fixed point yet to be decided upon in the city of London. Any type of aerial machine is available for entry, but the motor must be of French construction.



COUNT DE LA VAULX'S FIRST DIRIGIBLE AIRSHIP.

As it appeared when hovering over the Sartrouville Plain, near Paris, on the morning of January 9.

RACING BALLOON MAY ENTER DUTY FREE.

Balloons engaged in the Gordon-Bennett International Aeronautic race at St. Louis will, by a decision of the Secretary of the Treasury, under date January 16, 1907, be allowed to enter the United States under bond. This privilege of free entry will be limited to balloons engaged for some race or specific contest, and will not cover exhibitions. A consular invoice must be obtained from the United States consul at the city where the balloons are shipped, and must be presented at the time of entry into the United States. The balloons must be exported from this country within six months from the date of entry.

J. C. McCoy, who will almost certainly be one of the three defenders in the Gordon Bennett balloon race, has been awarded a license as a pilot by the Aero Club. Mr. McCoy had already qualified as a pilot of the Aero Club of France. He is the first aeronaut to make a formal entry for the Lahm cup. A cup will probably be offered this year for women aeronauts.

THE AUTOMOBILE

Vol. XVI Thursday, January 31, 1907 No. 5

THE CLASS JOURNAL COMPANY,
Flatiron Building, Madison Square
New York City

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ENGLAND:—Iliffe & Sons, Limited, 3 St. Bride St., Ludgate Circus, London, E. C.
FRANCE:—Boyveau & Chevillet, 22 Rue de la Banque, Paris.
GERMANY:—A. Seydel, Mohrenstrasse 9, Berlin.

Copyright, 1907, by The Class Journal Company.
Entered at New York, N. Y., as second class matter.
The Automobile is a consolidation of The Automobile (monthly) and the Motor Review (weekly).

Copies printed in 1905,	730,000
" " in 1906,	791,000
" " This Issue	17,300
" " Since January 1,	84,800

Present Status of the Chicago Show.

Historically considered, the rise and development of the show idea in the western metropolis is almost a repetition of what it has been in New York. Like the small beginnings that characterized the project in this city, there was a first abortive attempt at holding an automobile show, and in the case of Chicago this was of the open-air variety. It was a fizzle, but it did not discourage the promoter of the first successful show which was held but a year later than the first event of the kind, which occupied the floor at the Madison Square Garden in November, 1900. That was in 1901, at the Coliseum, and as the latter is a structure fully as large, if not larger, than the Garden, there was the same difficulty in piecing out the meagre exhibits to make some kind of a showing that would begin to fill it. With this exception, however, that the imported car had not reached the inland city at that time in anything like the numbers in which it was known in New York, so that there was a dearth of this material for the promoter to draw upon. Those who can recall the first event of the kind to hold forth in the Garden would not be apt to say that there were many imported cars on view, but no matter how small their number, there were some; there were considerably fewer at Chicago, if, indeed, there were any at all. The same expedient of making a track around the board floor on which to permit the cars to perform was resorted to with about the same results. In fact, even after there were more than enough cars and accessories to fill all the available space offered by the Coliseum, the exhibitors of the former were permitted to show them in action in the limited space afforded by their allotment, just to let the buyer know that they would run.

The rest is a matter of common knowledge—how the Chicago show has continued to expand, until in point of space occupied, as well as the total number of exhibitors, it is now superior to any held in this country. And its rise and growth have also been that of the city of Chicago as a market, or, more properly, as a distributing center, for a large part of the automobile output of the country. To a very great portion of the United States Chicago is east and that portion sends a large representation to the annual show, and it draws as well from the south and southwest, even across the border in Mexico. As a market with a large local demand it is second only to New York, as is evidenced by the rapid though sound financial development of its "automobile row," and as one of the events of the season its show has come to be a matter of importance not alone to the local population but to automobile interests at large. The West demands special attention.

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Encouraging Extent of the American Industry.

Statistics usually make dry and uninteresting reading, and the lesson they bear is more often than not forgotten ere it has had time to make any impression; nevertheless, there is nothing that reveals so surely the hand of progress, and for this purpose a complete list of the cars made in this country has been tabulated and is published in this issue. It shows, in condensed form, better than anything else possibly could, not alone the vast extent of the American industry as a whole, but the extremely wide range of types and prices that are offered to the American purchaser. From the diminutive runabout listed at a few hundred dollars up to the car selling at several thousand and upon which no expense nor ingenuity has been spared to make it not alone as modern, but as luxurious as possible, there is a wealth of variety such as seemed far beyond the wildest flights of imagination but a few years ago. Whether it be power, weight, multiplicity of cylinders or the reverse, or merely speed that the buyer sets up as his whole criterion in choosing a car, he will find his wants fulfilled. There are cars having all the way from one to eight cylinders; cars with less than 10 horsepower or with more than 50; cars at almost any weight desired and with any speed range or touring capacity that the most exacting of autoists could call for. To the observer who delves beneath the surface, the most surprising thing of it all and the one which shows better than anything else the firm foundation upon which the American industry is based, is the fact that these cars are built by their makers with few exceptions, and not merely assembled. Though the parts maker who is a specialist must ever be one of the strongest factors in the industry, the day of cars constructed wholly of stock parts of questionable value, cheaply assembled, is fortunately still a long way off. May it remain so.

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Auto Sprint Racing Has Had Its Day.

A post-mortem of the Ormond-Daytona meet quickly unearths the fact that sprint racing is a thing of the past in automobile competition. To construct a car practically, capable of lasting not much beyond the mile, is a task of which any automobile manufacturer is capable by simply multiplying cylinders and adding surplus power. Mr. Stanley applied himself to the job, and let us admit that he succeeded in evolving a flying freak, worthless for any other purpose. But the buyer of automobiles to-day demands a car which can go the distance, and, therefore, if he is influenced by racing performances, he now looks to a Grand Prix or Vanderbilt Cup winner, and pays slight heed to a dash performer. If there are to be future meets over the famous Florida course, there must be a commanding event almost equal in importance to a big international road race, and it would appear that those connected with the Ormond-Daytona racing fully realize the situation which confronts them. A late winter or early spring event of the distance variety undoubtedly would be welcomed by those makers who would participate in the Vanderbilt and desire another opportunity for competition with the same cars.

FLORIDA MEET SPOILED BY FREAK SPRINTER

Which Startlingly Concluded Its Career, Nearly Killed Driver Marriott, and Ended Racing—Next Year Distance Events to Occupy Center of Stage and Sprints Secondary.

By A. G. BATCHELDER.

ORMOND-DAYTONA, FLA., Jan. 26.—A steam freak, which just qualifies for competition under the present racing rules, spoiled the fifth meet on the famous ocean boulevard. This intermittent space annihilator—it was as capricious as a coquette in its brief flying moods—appropriating the center of the stage disproportionately to its scant utilitarian automobile value, discouraged the presence of cars built to go the distance, and caused the speed gathering to be a lamentable failure, sickening to those who had worked most industriously for success, and disappointing to the comparatively few spectators who came here solely for the racing.

How the Steam "Bug" Ended Its Career.

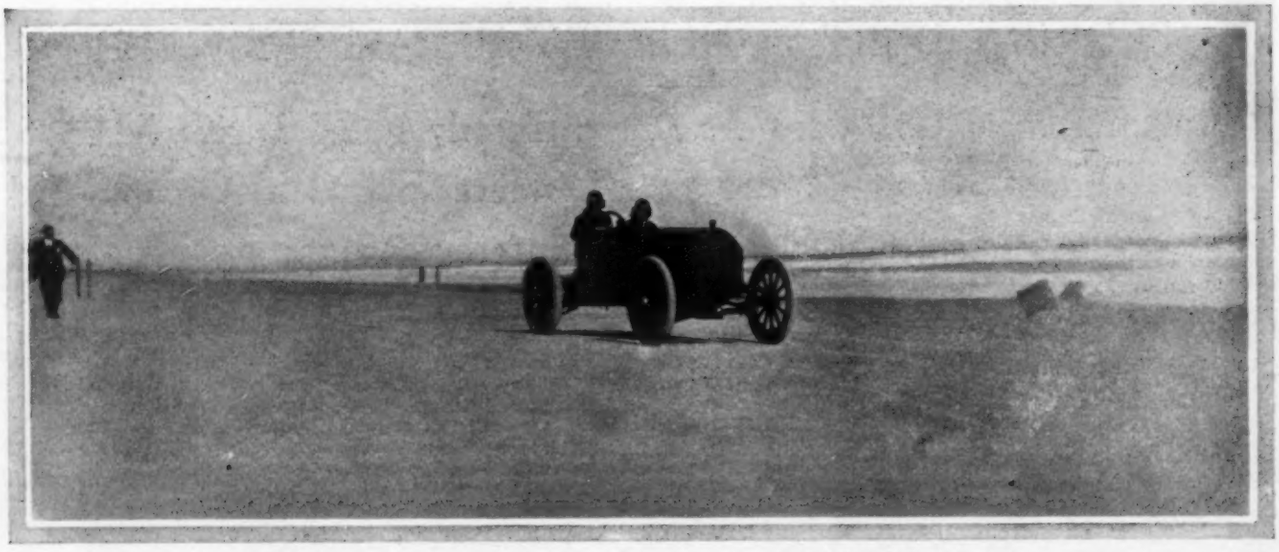
Then, as if glorying in the havoc which it had caused, this chortling, creepy, mechanical being abruptly, on Friday, ended the meet with a startling catastrophe which left it bestrewn in pieces over the sands, and gave its pilot the closest kind of a call from a horrible death. None too securely fastened, apparently, the forward part of the crimson-hued coat raised when a bump in the beach was encountered; Marriott lost or had inadequate control; the car skidded, then slid along on its side, rolled over several times, ejected its abnormal boiler, and wound up its career a complete wreck, with the driver limp and senseless underneath. Marriott's escape was marvelous, and a source of much thankfulness. His injuries are minor, and he will be about in a few weeks after several broken ribs have mended and other scars faded from view.

January Dates Were Most Inconvenient.

The weather, as a whole, was ideal—a vast change from that which existed during previous meets, when fur coats were frequently in demand. But the week was inconvenient to the automobile trade, owing to the proximity of the Chicago show, and this kept away some entrants who might not have been deterred because of the exaggerated presence of the Stanley "Tea-Kettle."

The two combined completed the destruction of the entry list, which had its final blow when information came that Wagner and the 1906 Vanderbilt Darracq and S. B. Stevens and the 1905 Vanderbilt Darracq were eleventh hour withdrawals. To designate them as withdrawals might not be exactly correct, for it seems that no entry blanks were signed, nor fees paid. W. J. Morgan says he thought he had a distinct understanding with the American Darracq Company manager, even though the blanks were not signed. The latter must have considered the understanding void when

THE FLORIDA BEACH NEVER APPEARED TO BETTER ADVANTAGE WITH ITS ARTISTICALLY DISTRIBUTED GROUPS OF SPECTATORS



DRIVER BLAKELY AND HIS 70-HORSEPOWER AMERICAN MERCEDES THAT WON THE LION'S SHARE OF HONORS.

the entry list dwindled to such small proportions—and it is true that the only car of Darracq caliber in the opens was the American Mercedes. Another time the indefatigable Morgan says he will not consider any entry actually made until the blank is signed and delivered. All around, this is the better plan for all concerned.

And What of Another Year?

When the débris of the wrecked steamer, which had not been carried away by the insatiable souvenir hunters, had been removed, and it was learned that the unlucky—or rather lucky—Marriott was not badly hurt, the officials and pressmen gathered at the clubhouse for a mid-day luncheon given by the Florida East Coast Automobile Association. President Asa Paine, one who is not discouraged easily, and L. R. Speare, the conscientious referee of the meet, were at the head of the table. A serious discussion of the future Ormond-Daytona meet took place, the keynote of which was that the day of sprint racing in automobile competition had passed; that not only the makers, but the public placed greater value on a car that could go the distance instead of one specially constructed for a short dash.

The question of a program for the 1908 meet was referred to a committee to consist of Chairman Jefferson deMont Thompson, of the A. A. A. Racing Board; S. A. Miles, manager of the N. A. A. M.; M. I. Brock, assistant manager of the A. L. A. M.; Alfred Reeves, manager of the A. M. C. M. A.; President Asa Paine, of the F. E. C. A. A., and W. J. Morgan, its New York representative. This capable set of men will hold a session in the near future, and something definite concerning the next year's meet will be announced early in the summer—early enough to give time to prepare.

"LICENSED" DAY AND "INDEPENDENT" REEVES.

The Florida Gold Cup, a 300-Mile Race.

One suggestion for the 1908 meet is a 300-mile race, 150 miles a day, for the Florida Gold Cup, which shall go to the winner without any qualifications. Its value would be not less than $1,500. Only cars which participate in this event, and shall travel at least 100 miles, to be eligible for free-for-all record trials, which would take place on the fourth day of the meet, the third day being occupied with stock-car races of not less than ten miles. For the Gold Cup race there might be required stock chassis and specified cylinder capacity or fuel limitation, and perhaps all three. The committee will wrestle with the rules, which shall be issued early enough to give makers an opportunity to comply with conditions imposed.

The Gold Cup race would be a winter Vanderbilt cup affair, and the Ormond-Daytona beach furnishes an ideal place. Its straightaway is 15 miles, and could be lengthened to 20 miles, and loops might be constructed at the two ends at a small expense.

PAINE, THE DRUMMER.

100-Mile Race for Minneapolis Cup Star Race.

Proof of the interest in long-distance racing was supplied by the only real race of the meet—the 100-mile contest for the Minneapolis Cup—won by a newcomer to the lists, the American Mercedes, skilfully handled by diminutive Blakely, whose work with the Continental-tired car from Long Island City places him in the ranks of cup drivers. Getting away in the lead, outclassing its opponents, the American duplicate of the famous European car traveled the century without a skip or trouble of any sort, giving a consistent performance that commanded the attention of the onlookers. The Rolls-Royce, rated at 20-horsepower—the Mercedes is given as 70—which had had a hollow victory in the international touring car championship, owing to a slight engine trouble that left the Welch *hors du combat* for the moment, survived the "hundred," though some distance in the rear of the winner. A. L. Kull's Wayne, and Ralph Owen's New York-to-Florida pathfinding Oldsmobile were still pursuing the even tenor of their way when Referee Speare found it necessary to call them from the beach in order not to interfere with the other races. No matter how small were the fields, Clerk of Course Reeves called them according to the planned schedule.

About Some of the Other Races.

The Welch, with its bright green, was a convincing winner on Wednesday of the 20-mile American touring championship, its 22:32 4-5 being a record for fully equipped stock cars at the distance.

F. E. Stanley drove one of his own cars in the 10-mile open on Wednesday, running a fair second to Blakely and the American Mercedes. Marriott and the "Bug" figured as a starter, but went down and out at about a mile, with both cylinders out of commission.

The Wayne, with A. L. Kull at the wheel, had a look-in on Thursday, taking the 5-mile standing start for cars listing between $1,500 and $2,500.

Previous to its sensational disintegration on Friday, Marriott's "Bug" had been unable to better its :28 1-5 mark of a year ago. On Monday it did :38 3-5 in an effort that was handicapped by the incoming tide; Thursday the figures were :31 4-5; and Friday before the accident the first mile was in :32 4-5, and then came one in :29 3-5, which encouraged Marriott to believe that the next attempt would bring a new record. Instead of this his life hung in the balance.

THE TALK OF THE TIDE-MADE COURSE.

Captain C. E. Hutton, the Rolls-Royce entrant, made many friends, his unassuming manner of looking after his interests commending him to the officials generally, and his car was always ready when required.

Tire representatives in attendance were: Joseph M. Gilbert, general manager, J. L. Gibney, Philadelphia manager, and W. A. Rutz, sales agent, Continental Caoutchouc Company; G. A. Davidson, Diamond Rubber Company, and A. J. Wills, B. F. Goodrich Company.

George H. Day, general manager of the A. L. A. M., who is spending a vacation in Daytona as a guest of J. B. Moore, a Hartford-Floridian, was a daily spectator. Mr. Day looks rugged, and it would appear that he did not require any rest unless he so willed it.

First Vice-President George E. Sebring, of the Florida East Coast Automobile Association, Wednesday night entertained some of the officials at dinner in his palatial new home in Daytona. Mr. Sebring and his brother are responsible for building of Sebring, Ohio, where they have one of the largest potteries in the world. In the club handicap Mr. Sebring's Winton was rated a probable winner, but in some manner the man from Ohio failed to run one-two-three.

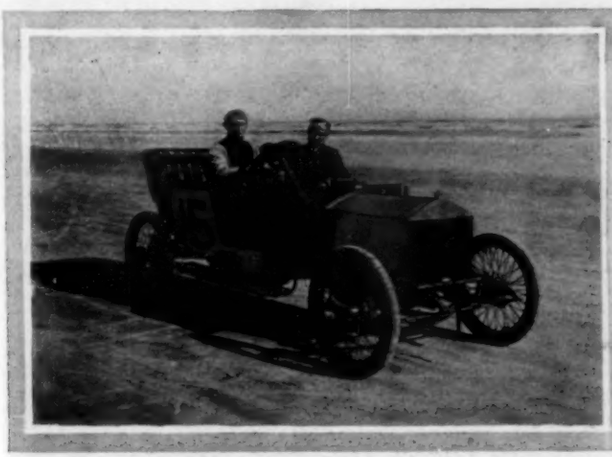
AMERICAN MERCEDES AND THE "BUG" STARTING IN TEN-MILE.

One of the pleasant functions of the week was the dinner given Tuesday night at the Hotel Ormond by Joseph M. Gilbert, manager of the Continental Caoutchouc Company, and A. L. Kull, manager of the New York branch of the Wayne. Mr. Gilbert naturally was elated that the all-conquering American Mercedes wore Continental tires.

Prominent trades people present included Ray Owen, sales manager of the Reo Motor Car Company; R. E. Olds, the maker of the Reo line; A. W. Church, of Wyckoff, Church & Partridge; John W. Haynes, who drove the Haynes in the Vanderbilt race; Walter C. Baker, American Ball Bearing Company; Ray P. Johnson, Warner Gear Company; F. A. Davis, formerly of Gray & Davis.

L. H. Perlman, New York agent for the Welch Motor Car Company, celebrated the victory in the 20-mile American touring car championship by a dinner, Thursday night, at the Hotel Ormond. Mr. Perlman is an enthusiast, and when two other concerns which were to share a freight car with him for transportation of autos to Florida withdrew, he refused to be influenced, and bore the entire expense. John Brodsky, a well-known New York lawyer, accompanied him, and was one of the speakers at the dinner.

The building of a loop at each end of the Ormond-Daytona course would be comparatively inexpensive because of the abun-



CAPTAIN HUTTON'S ROLLS-ROYCE THAT WON DISTINCTION

L. H. PERLMAN AND THE WELCH TOURING WINNER.

THE WINNING WAYNE AND ITS DRIVER, A. L. KULL.

dance of road material near at hand. It has been suggested that at the Ormond end at least—and perhaps at the Daytona turn also—the road would continue from the beach all the way across the narrow peninsula and strike the picturesque Halifax river road, with its abundance of tropical foliage, and then swing back to the ocean over the hard-shell thoroughfare past the Hotel Ormond, the guests of which could watch the race from its plenteous verandas.

The officials were both experienced and conscientious, but, unfortunately, they had little to do as compared with former meets; a schedule arranged each day was faithfully observed. Referee, L. R. Speare, clerk of course, Alfred Reeves, starter, John W. Haynes, timers, "Jack" Kerrison and Walter C. Baker and judge, S. L. Haynes, were always on deck, and F. E. C. A. A. Committeemen Allen, Gore, Sebring and Parkinson helped wonderfully. President Paine drove his Winton repeatedly in order to fill out in races.

F. E. Stanley, the creator of the "Bug," has no idea of resurrecting his famous steam sprinter; in fact, he does not hesitate to make the definite statement that the worth of a single fast mile or two has depreciated to such an extent that it is no longer worth while to build a car for this single purpose. Mr. Stanley intends to return the Dewar trophy to Sir Thomas Dewar, the donor, and suggest to him the advisability of offering it in a race for a longer distance, at least ten miles, and perhaps more. Mr. Stanley apparently has studied the Christie car, for he states that it is his intention to bring forth a front-drive steam car in the near future.

SUMMARY OF 1907 ORMOND-DAYTONA MEET.

Monday, January 21.

TIME TRIALS AT ONE MILE.

Stanley, 30-h.p.; F. H. Marriott..... :28 4-5
:28 1-5, record held by same car and same driver.
Curtis, 2 1-2-h.p.; H. G. Curtis..... 1:05 2-5

Tuesday, January 22.

FIVE MILES, ALL CLASSES, STANDING START.

1. American Mercedes, 70-h.p.; E. B. Blakeley..... 4:25
2. Rolls-Royce, 20-h.p.; Capt. C. E. Hutton.....
3. Stanley, 20-h.p.; H. Ernest Rogers.....

FIVE MILES, ALL CLASSES, FLYING START.

1. Stanley, 30-h.p.; F. H. Marriott..... 3:44 4-5
2. Rolls-Royce, 20-h.p.; Capt. C. E. Hutton..... 4:52 4-5
3. Stanley, 20-h.p.; H. E. Rogers.....

ONE MILE-A-MINUTE AMERICAN TOURING CAR CHAMPIONSHIP.

1. Stanley, 20-h.p.; Frank Durbin..... :53 3-5
2. Rolls-Royce, 20-h.p.; Capt. C. E. Hutton..... 1:09 2-5
3. Stoddard-Dayton, 30-h.p.; G. D. W. Rose.....

FIVE-MILE MATCH RACE.

1. Stanley, 20-h.p.; H. E. Rogers..... 3:51 4-5
2. American Mercedes, 70-h.p.; E. B. Blakely.....

QUARTER-MILE HIGH-GEAR SLOW RACE, STOCK CARS.

1. Stevens-Duryea, 20-h.p.; W. A. Adriance..... 1:13
2. Peerless, 30-h.p.; W. C. Baker.....
3. Oldsmobile, 30-h.p.; Ralph Owen.....

ONE-MILE SPECIAL MATCH.

1. Oldsmobile, 30-h.p.; Ralph Owen..... 1:37
2. Autocar, 20-h.p.; Asa Paine..... 1:39

ONE-MILE MOTORCYCLE RECORD TRIAL.

Curtis, 2-cylinder; H. G. Curtis..... :53 4-5

Wednesday, January 23.

20-MILE AMERICAN TOURING CAR CHAMPIONSHIP.

1. Welch, 50-h.p.; L. H. Perlman..... 22:32 4-5
2. Winton, 30-h.p.; Asa Paine..... 28:16
3. Wayne, 35-h.p.; A. L. Kull.....

20-MILE INTERNATIONAL TOURING CAR CHAMPIONSHIP.

1. Rolls-Royce, 20-h.p.; Capt. C. E. Hutton.....
2. Winton, 30-h.p.; Asa Paine.....

TEN-MILE, ALL CLASS, STANDING START.

1. American Mercedes, 70-h.p.; E. B. Blakely..... 7:42 1-5
2. Stanley, 20-h.p.; F. E. Stanley..... 7:52
3. Welch, 50-h.p.; L. H. Pesiman..... 10:55

ONE-MILE MOTORCYCLE MATCH.

1. Curtis, 2-cylinder; H. G. Curtis..... :46 2-5
2. Indian, 2-cylinder; W. Ray..... :46 3-5

Thursday, January 24.

100 MILES, ALL CLASSES—MINNEAPOLIS TROPHY.

1. American Mercedes, 70-h.p.; E. B. Blakely.....1:26:10
2. Rolls-Royce, 20-h.p.; Capt. C. E. Hutton.....2:02:35
3. Wayne, 35-h.p.; A. L. Kull.....
4. Oldsmobile, 30-h.p.; Ralph Owen.....
5. Welch, 50-h.p.; L. H. Pesiman.....

TEN-MILE OPEN HANDICAP.

1. American Mercedes, 70-h.p.; 15 sec.; E. B. Blakely.... 13:59
2. Franklin, 30-h.p.; Dr. Stinson..... 14:34 3-5
3. Winton, 30-h.p.; Asa Paine..... 14:34 4-5

FIVE-MILE TOURING CARS, $1,500 TO $3,000.

1. Wayne, 35-h.p.; A. L. Kull..... 5:52 1-5
2. Stevens-Duryea, 20-h.p.; W. A. Adriance.....

ONE-MILE MOTORCYCLES.

1. Curtis, 2-cylinder; H. G. Curtis..... :46 2-5
2. Simplex, 2-cylinder; Wm. Ray..... :46 4-5

Friday, January 25.

SIX-MILE HANDICAP, F. E. C. A. A. MEMBERS.

1. Cleveland, 30-h.p.; J. Laughlin..... 8:08 2-5
2. Cleveland, 30-h.p.; R. M. Bond..... 8:10 4-5
3. Stoddard-Dayton, 30-h.p.; G. W. D. Rose..... 8:47

TWELVE-MILE SPECIAL MATCH.

1. Rolls-Royce, 20-h.p.; Capt. C. E. Hutton..... 13:12 2-5
2. Franklin, 30-h.p.; Dr. Stinson..... 14:32 4-5

ONE-MILE RECORD TRIALS.

Stanley, 30-h.p.; F. H. Marriott..... :32 4-5
Stanley, 30-h.p.; F. H. Marriott..... :29 3-5

ALL THAT WAS LEFT OF THE STANLEY "BUG."

F. B. HOWER HEADS TOURING BOARD.

What the Touring Club of France has done for automobilists in the European republic, and how it has improved roads and hotels, protected historic sites, given information on tours, hotels and garages, used the weight of its 100,000 membership in legislative matters, and generally contributed to make touring easy and pleasant, is common knowledge. The Touring Board of the American Automobile Association intends to do as much for automobile travelers in the western republic. Under the chairmanship of Frank B. Hower, of Buffalo, who has just been appointed to the position by President Hotchkiss, the board will begin at once the collection of information of use to tourists, covering the present condition of laws and ordinances in force in the different States and cities of the country, the best routes between given centers, hotel and garage rates on such routes, and where they may obtain the most serviceable maps of any given territory. Dai H. Lewis, of Buffalo, has been appointed secretary of the Touring Board, and he will have charge of all the detail work, and will be in direct communication at all times with the office of the association in the Metropolitan Building, 1 Madison avenue, New York.

It is the belief of the new administration that the endeavors of the Touring Board in this direction will shortly put an inestimable value upon membership in the American Automobile Association not heretofore enjoyed, and from which benefits will be derived by American automobilists which will make membership in the A. A. A. a more valuable and essential asset.

Mr. Hower, the new chairman of the Touring Board, is an enthusiastic automobilist, is vice-president of the Automobile Club of Buffalo, of which he was one of the charter members, and is well qualified for this position, having rendered valuable service in connection with the management of the 1906 Glidden Tour. Mr. Lewis, the new secretary, is at present secretary of the Automobile Club of Buffalo, and in this position has established a touring bureau for the members of this club which is complete in every detail, and, owing to his extensive touring in this country, is especially well fitted for the work.

FEDERAL AUTO LAW TO BE ADVOCATED.

A strong forward movement is about to be made in the matter of inter-State automobile legislation. Charles T. Terry, the new chairman of the Law Committee of the American Automobile Association, and W. H. Hotchkiss, president of the A. A. A., have drawn up a bill on this subject, which will be introduced at the present session of Congress. If it should prove that a Federal law is liable to conflict with the rights of individual States, then efforts will be concentrated toward securing as uniform an automobile law as possible throughout all the States in the Union. It is hoped to pass a law whereby a motorist may certify to some department or bureau of the National Government that his automobile is duly registered in his own State, and that it is his intention to use the machine in other States. Upon complying with such regulation a certificate might be issued exempting him from additional registration.

In view of the growing complication of the automobile legal situation, this move is bound to meet with the approval and support of all automobilists. A meeting of representatives from all the automobile clubs in the State of New York will be held shortly, probably at Albany, when a definite policy on the motor legal situation will be mapped out.

INSURANCE BILL FAVORABLY REPORTED.

ALBANY, N. Y., Jan. 29.—Assemblyman Young's bill, authorizing the formation of insurance companies to insure against loss or damage to property resulting from accident to a duly licensed automobile, and against loss or damage to property when caused by an automobile, was favorably reported by the assembly insurance committee to-day.

KNOX STOCKHOLDERS ELECT DIRECTORS.

To celebrate the completion of the recently erected additions to the plant of the Knox Automobile Co., at Springfield, Mass., the annual meeting of the stockholders, which took place on Tuesday last, the 22d inst., was in the nature of an informal housewarming. The directors elected for the coming year are: E. H. Cutler, W. E. Wright, A. E. Smith, P. Murray, A. W. Cutler, H. G. Farr, W. H. Chase, M. J. Greenwood and George W. Bennett. The directors then reelected the present officers—E. H. Cutler, president, and W. E. Wright, vice-president. Under the Massachusetts law the secretary and treasurer are elected by the stockholders direct, A. E. Smith and H. G. Farr being continued in these posts. Following this, the directors elected the executive committee, which consists of E. H. Cutler, W. E. Wright, A. E. Smith, H. G. Farr and G. W. Bennett. The treasurer's report for this past year showed a surplus equal to 13 per cent. of the capital stock.

An inspection of the plant followed, the company having practically doubled its facilities during the past few months, so that it now has a daily capacity of four touring cars and one truck. The most recent addition is a four-story and basement building measuring 75 by 200 feet, while the new foundry is one of the largest in New England. It is of steel and reinforced concrete, even the sashes being of iron. All the bronze and aluminum castings used on the Knox cars are made here. The new body and trim shops have also been planned along the most modern lines.

VERMONT WILL IMPROVE ITS ROADS.

MONTPELIER, VT., Jan. 29.—The Vermont Legislature has passed a law providing for the improvement of public roads throughout the State, and the appointment of a State highway commission. The new law provides that the Governor shall appoint a State highway commissioner, whose term of office shall be two years from the date of his appointment, and who shall have control of and direct the expenditure of all moneys appropriated by the State, or apportioned to cities, towns, or villages for highway improvement. He shall appoint each year a supervisor in each county in the State, who shall assist him in supervising the expenditure of State money to be used for the permanent improvement of the main thoroughfares and most important roads in each town, the selection of roads being made with the main purpose of securing, so far as possible, trunk lines of improved highway from town to town, and to important local railway stations. For this purpose the sum of $50,000 annually was appropriated, and under certain conditions a town may have free of charge the services of a competent road engineer.

PALM BEACH MOTOR BOAT REGATTA.

PALM BEACH, FLA., Jan. 29.—The Palm Beach Power Boat Association races successfully opened to-day with a substantial entry list, good racing, and plenty of enthusiasm. The handicaps were based on the rating measurements of the American Power Boat Association, but on the following days the actual performances of the boats are to govern. The bulk of the honors went to *Simplex VIII.*, owned by H. Broessel, Jr., of New York City. This new craft captured three of the five events. E. J. Schroeder's champion *Dixie* looked like a sure winner from scratch in the Class B event, but her bearings becoming overheated she was stopped to prevent being disabled for the remainder of the week.

AERONAUTS FROM SPAIN FOR AMERICAN RACE.

President Cortlandt Field Bishop, of the Aero Club of America, has received a cablegram from the Aero Club of Spain, naming Captain A. Duani, Lieutenant Herrera, and Señor Salamanca as entrants in the international balloon race to be held at St. Louis October 19. These three are the same ones who represented Spain in the 1906 race for the Bennett Cup.

AN INCIDENT OF THE AUTO SHOW.

"Say, young man," said a venerable-looking old gentleman, approaching an attendant, immaculate in the faultlessness of his evening toilet, who was gracefully posing in the foreground at one of the principal exhibits of cars at the show last week. "Are you connected with the blank exhibit?"

The good-looking salesman—a college graduate who has recently made his début in the business of talking automobile, felt somewhat hurt that anyone should question his standing, but replied in the affirmative.

"Well, then, I want you to show me the differential of your car and explain its advantages," went on the visitor.

"The differential, you say; h'm, the differential, is it," mused the young man.

"Yes, yes, the differential. Not the differential calculus nor the differential tariff; the automobile differential. Where is it put and what does it do?—that's what I want to know."

"Well, now—oh, just step this way, please. No, not to that bare car, to this limousine—this way, over here."

"You see, my son, he knows all about automobiles," went on the old man, "and he's finally persuaded me that I ought to have one, but he says 'don't you go and buy any car that hasn't got a good differential on it. If you do,' he says, 'you're bound to have trouble. The first thing you know, when your car is running smoothly along the street you're going to skid and side swap something,' whatever he means by that."

"Oh, skidding, you say," replied the young man, feeling relieved, but keeping his weather eye out for that haven of refuge in all cases of embarrassing questions—the technical man of the firm.

"Well, we'll equip your car with any style of non-skid you desire, such as we have on this car here, for instance. And isn't that limousine a beauty?"

"But the differential isn't put in the tires, is it? My son told me it had steel cog wheels in it and was put underneath the car where you didn't see it."

"Oh, yes, you *mean* the differential," broke in the young man, as if he had discovered something quite novel.

"That's what I've been talking——"

"Just step over this way," exclaimed the young man in a business-like manner giving his inquisitor no further opportunity for expression by leading the way to another part of the exhibit.

"Now this here——this (oh, hang it! Why did I flag French) this——"

"Chassis," suggested a third party, who had been noting the young man's increasing embarrassment.

"Yes, this here chassis—I never can remember French," he added, apologetically. "This chassis"—lingering on the word—"will show you all about the differential and how it works."

"Will it—can it talk?" amusedly asked the old man. "Don't go away, it may need your help," continued the inquirer, and his would-be enlightener, who would have been only too glad to escape, wiped away the perspiration that had gathered on his forehead under an opera hat and set about elucidating the differential and its mysteries.

"Four speeds and reverse, selective type, direct drive on the high, no gears in mesh," he began.

"Well, but what are you talking about?" interrupted his hearer in a mild tone of surprise.

"Oh, yes, the differential. I thought you understood that was the subject of our conversation at the moment. Were you thinking of any other part of the car?" he inquired solicitously. Being assured on this point, he went on.

"Well, here we have the differential you have been inquiring about, four speeds and reverse, selective type, direct drive on the high, no gears in mesh, chrome nickel-steel shafts and gears running on ball bearings, aluminum case running in oil—running in oil," he repeated, striking a snag in the rehearsal of his lesson.

"But what has that to do with the wheels, and how does it prevent you from 'side-swapping' something when the car skids?" inquired the old man in a puzzled tone. "What do you work this brass lever here for?—to prevent a collision?" (taking hold of the gear-shifting lever.

The young man wearily mopped his brow once more, though the Garden was cool at the time, and as he was doing so caught sight of the designer of the car who had just entered the booth. There was no need of a distress signal—the technical man took in the situation at a glance. He walked over and was introduced to the inquisitive visitor who wanted to see the differential before buying a car. This formality completed, the young man suddenly remembered that he had an engagement elsewhere.

NON-STOP THOMAS SETS A NEW RECORD.

BUFFALO, N. Y., Jan. 28.—The non-stop Thomas flyer arrived in Buffalo last Friday morning about 5 o'clock, and left Saturday morning at 8 o'clock for Chiacgo, where the flyer will be kept running during the Chicago automobile show, which closes February 9. Ernest Kelly was at the wheel. Kelly's first run ended on Wednesday near Utica, when, because of the necessity of using gasoline purchased at various country stores, his carbureter became clogged, and the engine stopped after running continuously for 21 days, 3 hours and 29 minutes. This record will probably stand for some time, as it eclipses the former non-stop motor record of 200 hours, and also sets the highest mark for reliability of performance, as not one adjustment was made on the car from the time it started.

Word was received in Buffalo yesterday that Kelly and his crew were snowed in twenty miles east of Erie at 10 o'clock Saturday night. John Cowling, of Philadelphia, who is alternating with Kelly at the wheel, was doing the guiding. Kelly and his crew went to Erie by train, but hurried back to the point where the car was snowed, and aided the shovel brigade. Although the car was stopped, the engine was still chugging away.

While in Buffalo, Kelly said the engine was running better than when they started, and, barring accidents, would be in Chicago by the middle of this week. He said the roads were bad, ruts were deep, and the ground hard and frozen.

MAXWELL FUEL TEST PROVING SUCCESSFUL.

WORCESTER, MASS., Jan. 30.—Climatic conditions have not been favorable for the three Maxwell cars making the comparative fuel test from New York to Boston. Leaving Columbus Circus at 8:45 o'clock on Monday morning a successful run was made to Hartford, arriving at 8 o'clock in the evening. The next morning a start was made for this city and after a hard run, owing to the deep snow, the machines were garaged at 5 o'clock in the evening. The automobilists were met by representatives of the Worcester Automobile Club and enjoyed the hospitality of the club during dinner and the early hours of the evening. Since leaving Meriden, Conn., the worst road conditions have been encountered; frequently the cars sank into the soft snow almost up to their axles. Notwithstanding, the trio kept well together, gasoline, kerosene and alcohol all proving equal to the task. The only trouble causing delay was with tires. Two rear shoes had to be replaced, one at Springfield and the other at Worcester, the damage in both cases being done by twisting the chains when passing over street railway tracks. To-day the start was made for Boston.

LEON RUBAY MOVING UP TOWN.

The last of the original establishments of West Thirty-eighth street, New York City, is about to join the uptown movement. Leon Rubay, the well-known importer of French sundries, has leased the entire four-story building at 1697 Broadway, and is having it refitted to meet the requirements of his business. The ground floor will be used as salesrooms and offices, the second floor will be a showroom, the third floor will be a repair department for coils and magnetos, etc., and will be one of the best equipped shops for the care of ignition appliances in the city. The top floor will be used as a laboratory.

RULES FOR A. C. G. B. I. HEAVY CAR TOUR

LONDON, Jan. 24.—The Races Committee of the Automobile Club of Great Britain and Ireland has lost no time in issuing the conditions governing the new touring car event for 1907, as soon as it was found unworkable to hold the proposed contest concurrently with the Tourist trophy as a kind of subdivision The object of the competition is the development of ideal touring cars such as are usually fitted with covered bodies and of the horsepower required by the ordinary users, as opposed to the racing car, and is not necessarily a race between existing standard types. The horsepower and consequently the speed are limited by fixing a definite allowance of fuel for a given distance. The event is open to cars of all nationalities and must take place between May 1 and October 1, the definite date to be fixed by February 1.

We take the following from the regulations for the contest, the minimum distance of which is 250 and the maximum 400 miles: The fuel to be used will be provided by the club and shall be a petroleum spirit of a specific gravity of 0.715 to 0.725 at 60 degrees Fahrenheit. It will be supplied for practicing purposes should competitors desire to use it. For 1907 the allowance will be a gallon to every 16 miles for the Isle of Man course and an equivalent amount for a different route. The car specifications are as follows: Driving wheels no less than 36 inches in diameter; tires on driving wheels no less than 920 by 120 mm.; track no less than 4 ft. 6 in.; distance from dashboard to front edge of back tires no less than 5 ft. 9 in.; platform behind dashboard no less than 8 ft. 6 in. long, to be covered by the body. There must be a clearance of at least 8 inches from the ground when the car is fully loaded. The total load to be carried by the chassis shall not be less than 2,240 pounds. Such ballast as may be necessary to bring the total load carried by the chassis up to 2,240 pounds must be provided by the competitor in form of lead securely fixed to the floor and back seat boards, and of this weight 224 pounds shall be carried on the back seat boards. The body must be substantially constructed and easily removable. A wind screen must be fitted to every car, not more than 12 nor less than 6 inches from the back of the front seats and behind them. The top of the screen shall not be less than 8 feet from the ground nor the width less than 5 ft. 3 in.

Mud guards must be fitted to front and rear wheels; the steps must be continuous with the guards, which may only be attached to the chassis.

Every competing car must show that it is capable of being driven half a mile a 12 miles an hour or less on the level on the top forward gear and without the manipulation of the clutch. It will also be required to show that it is capable of being stopped, restarted, and ascending a hill of about 1:6 on a forward gear. A limited number of attempts will be permitted. Between the start and finish of the race the driver and his mechanic alone shall be permitted to assist a car, and no stores, supplies (except water), spare parts, or tires shall be taken on to the car during the race. The driver and his mechanic only shall be on the car during the race. Not more than two cars by one manufacturer will be accepted; the order of starting will be decided by ballot. The entrance fee for 1907 is £30 per car, of which £10 is payable on day of entry and the remainder on or before May 1. After this date, entries are received at a rising scale of £2 per week until a month before the date of the event.

Cars will be weighed with empty tanks; any car arriving after the time limit fixed will be disqualified. Every car which completes the whole distance will be re-weighed and fuel tanks, water tanks and lubricating reservoirs will be emptied by the club. Forms of application and for the necessary specification of cars will be forwarded from headquarters, 119, Picadilly, London W.

WHAT IS DOING IN EUROPE'S CAPITAL OF AUTOMOBILING

By PHARE.

PARIS, Jan. 24.—Thirty liters of gasoline for every 100 kilometers of distance constitutes the new and principal clause in the regulations for this year's Grand Prix race in France.

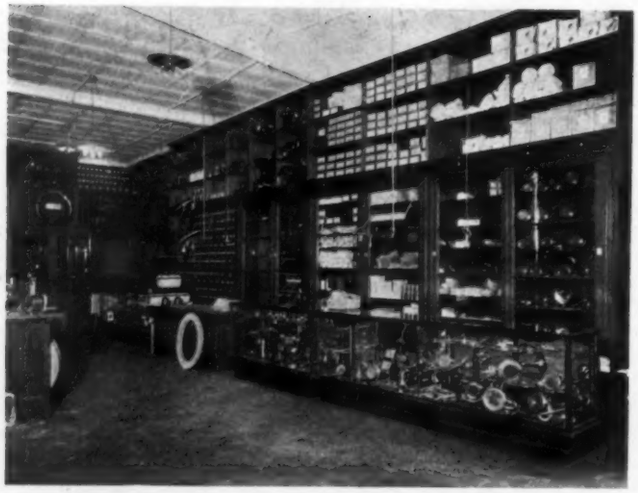
M. Clemenceau, the Prime Minister, acting in his cabinet capacity of Minister of the Interior, has just granted to the Automobile Club de France authority to run "a grand speed race" on a closed circuit of roads in France in 1907. Application to the minister (who is branded by the Opposition as the Dictator, the governmental, anti-Godhead, responsible for the movement to crush religion out of France), with a certain period of suspense, was only a formality. It was a foregone conclusion that the permit would be granted—refusal in the face of France's "greatest industry" would cause a crisis, auto, if not ministerial.

With permission to use 100 liters of petrol, the automobile firms entering machines for the race will not feel that they are being narrowly restricted. This quantity will amply answer the appetite of a racing monster, so that the contest is not likely to resemble a touring jaunt to Jersey City. A sort of minority committee in the French auto world has been advocating a reduction of racing machine powers. Many numbers of this coterie are constructors of vehicles that are very infrequently arrested for "scorching."

After all, why shouldn't automobiles be handicapped in races? Horses are handicapped, cyclists are handicapped, and many automobile manufacturers are handicapped in their work of producing machines to compare with those of their competitors in the trade. Limiting the fuel consumption to a certain quantity gives everybody a chance to start scratch, so that the man who comes up the road with a smaller quantity of gasoline practically grants himself the opportunity of starting behind scratch, hence, so much the worse for him.

Thomas A. Edison, whose close relationship with automobiling is widely known on account of that very small electric battery which has not yet been used to run the biggest automobiles, is to be honored in France, contemporary with his celebration, en famille, in America, of his fortieth year as an inventor. M. Emile Durer, a local author of reputation, who figured as envoyé from President Carnot when Mr. Edison was invited to come to Paris on the occasion of the exposition of 1889, has written an "electric" play, embracing chief events and episodes in the life of the Wizard. This play will be sung, danced and pantomimed. It is to be called "Edison," and the music has been composed by a "grand musician," whose name has not yet been divulged. "Edison" will be produced at one of the leading Paris theaters in the form of an electric fairy scene, and "on lines of elaboration heretofore unheard of."

Among the "unpatriotic" Americans who have recently purchased automobiles in Paris are Mr. Chisholm, president of the National Paper Company, 40-horsepower Bianchi; L. H. Spaulding, of New York, 40-horsepower Rochet-Schneider; Frank Gould, 14-horsepower C. G. V.; Stewart Browne, 70-horsepower Rochet-Schneider; S. S. Keyser, 20-horsepower Renault; Ernesto Fabbri, 75-horsepower Mercedes; George Gould, 10-horsepower Renault; Frank Tilford, 40-horsepower Rochet-Schneider; Mrs. Katherine Giles, of Pittsburg, 24-horsepower Fiat; Captain Bell, of New York, 24-horsepower Panhard; Jefferson Seligman, 40-horsepower Rochet-Schneider; the Misses Brice, of New York, 20-horsepower Renault.



AUTO SUPPLY COMPANY'S FINE GENERAL SALESROOM.

AUTOISTS HAVE DEVELOPED A NEW INDUSTRY.

Almost as rapid as the development of the automobile itself has been the extension of accessories, clothing and the thousand and one things for the car and its driver which modern refinement now asks for as necessaries. Only a few years ago the manufacturer supplied the naked car, the hardware dealer stocked a few accessories, and at the clothier store some feeble attempt was made to clothe the automobilist. It was a transitory stage and had all the disadvantages of transition. The Auto Supply Company realized this, and made a vigorous and successful attempt to change the old order of things. It is no exaggeration to say that in their new store at 1733 to 1737 Broadway, New York, the automobilist will find everything necessary, useful or ornamental for himself or his vehicle. On the ground floor, with a 37 1-2-foot frontage on Broadway, are the car accessories. Lamps, tires, horns, speedometers, sparking plugs, electrical appliances, and all the stock fittings which every self-respecting car carries about with it are there in endless variety. Not only the fittings themselves, but every screw, bolt or clip required to fix them in position can be obtained. If the automobilist is luxuriously inclined, and hankers after elegant fittings, ingenious appliances, or the elegancies of handsome closed bodies, he will find them all under the same roof.

On the floor above a handsomely fitted-up room, with a 75-foot frontage on Broadway, the automobilist himself is provided for. A quarter of an hour spent with the clothing expert and you will be fitted out from head to foot in the most suitable auto clothing for winter or summer use, for racing or touring, for driving or for use as a passive traveler. The lady autoist is equally well provided for, and will find here auto clothing with a chic which betrays the work of the most skilled home and foreign designers.

SECOND FLOOR, WHERE AUTOMOBILE CLOTHING IS SOLD.

Each department of the Auto Supply Company is in charge of an expert. The big stock of tires of all makes is handled by a man who has had long experience in tire manufacture; the hardware department is supervised by a practical tool-maker; the different accessory lines are each taken charge of by salesmen specially versed in that particular line; the clothing section is in the hands of men and women who have studied closely the sartorial art in its application to automobiling. Thus the buyer in selecting from an infinite stock has always the aid of highly-trained specialists.

RELIANCE TRUCK MAKES LONG WINTER RUN.

To publicly demonstrate the value of their commercial vehicle, the Gearless Transmission Company, of Rochester, N. Y., arranged a mid-winter run from Detroit to Chicago. The vehicle was a two-ton Reliance truck, equipped with gearless transmission, and a two-cycle engine, which started from Detroit last Saturday evening. On Monday morning Coldwater, Mich., was passed; on Tuesday morning South Bend, Ind., was reached, and on the same day Chicago was entered in triumph. The object of the tour was fully attained, for the Reliance truck, with its two-ton load, proved that it could be successfully driven over long distances in the middle of winter and deliver goods more promptly than shipments could be made by rail. This is one of the first, if not the first, attempt to drive a large commercial vehicle from one city to another in the heart of winter, and it shows something of the progress that is being made in this department. The truck is now being exhibited in space E No. 9 at the Chicago show, in the Armory Building.

A STATEMENT BY THE FORD ATTORNEY.

"Few people realize how much is at stake in this Selden litigation," said R. A. Parker, attorney for the Ford Motor Company, in the famous suit. "One hundred millions of dollars is a conservative estimate of the amount that is at stake in this growing industry and which would be jeopardized should the original contention of the licensed association be sustained. There are some thirty-three to thirty-five members of the licensed association still in business. Of the independent makers there are now considerably over one hundred concerns producing automobiles; and the independents now make over 60 per cent. of all the automobiles made in America and Europe. Could the ridiculous claims of Selden to a basic patent which would apply to every automobile built to-day—thirty years after the patent was originally applied for—be sustained by the higher court, all these concerns would be bankrupt. But the freedom with which astute and conservative investors put their money into the independent automobile enterprises is proof that this litigation, while formidable in appearance, is not taken seriously by those who ought to know. In short, there is no longer any doubt in the minds of the independents that Ford will win a clean-cut decision, and as a basis for this confidence we need only cite the evidence of the chief witnesses for that side, Selden himself, Dugald Clark, Bentley, and others in which they make damaginig admissions which show that the A. L. A. M. no longer hopes, or even asks for, a decision so broad as to uphold the basic claims on which at first so much stress was laid, but that the most they hope for is some kind of decision upholding some kind of a patent, to which those concerns which were, through an appeal to greed and lust for monopoly, induced to become parties to the original scheme, may still be made to pay tribute."

COMPACTNESS IS FEATURE OF THIS CLUTCH.

A multiple disk clutch that will hold a 40-horsepower car and yet is so compact and light that it can be removed and held on one hand, is something new. The principle is one that has been tried for several years in Europe and improved upon by the Aerocar Company, of Detroit, until all objectionable features have been removed, and a clutch, that is said to be ideal in its operation, obtained.

NEW AEROCAR CLUTCH IS LIGHT.

The whole consists of 42 light thin disks, alternating steel and bronze. The 21 steel disks are made of high carbon steel and are forced to revolve with the flywheel. The 21 bronze disks are made of special phosphor bronze of the very finest quality and are fitted in grooves on the terminal of the transmission shaft. The disks run in dust-tight casings in a bath of oil. This prevents wear and permits of a gradual taking up of the load as the film of oil is forced from between the disks as the clutch is let in. By the use of the alternating steel and bronze disks, the cutting (which has always occurred sooner or later where only one metal is used) is entirely overcome and failure to work obviated.

Between each plate and carried on the steel plate are relief springs which make the action almost instantaneous. In the past, multiple disk clutches have had four, six and even eight compression springs placed at equal distances around the edge. In this new Aerocar clutch there is but one and that at the center working on a thrust ball bearing. The smallness of the whole is interesting. By removing six bolts from the flywheel and disconnecting the universal joint it can be taken out and easily held on one hand. It is very sensitive in operation and yet will start a standing load from the high gear on a hill. The clutch will be fitted on the new Aerocar models and will greatly enhance the value of those machines.

BRITISH AUTO TRADE BUOYANT.

Consul F. W. Mahin, of Nottingham, England, writes that the largest business on record is being done this year by the automobile and bicycle factories of England. The feeling in automobile-making circles is so buoyant and sanguine that confidence is expressed of entirely supplanting foreign cars with British in process of time. It would be impossible just now, for the home factories cannot supply the home demand. But new factories are being erected and old ones enlarged, and within a few years the aggregate plant is expected to be able to meet all demands. It is hardly possible that the present boom will continue unabated for any great length of time, and so there is danger of undue inflation and overproduction, and a repetition of the disaster which followed the bicycle boom a few years ago.

Large plans are being laid for this year in the motor-car branch, when a prodigious trade is expected. It is intended to produce a greater range of automobiles, and particularly cheaper grades, from 10 to 35 per cent. lower in price than the usual output of British factories. Several cheap makes have stood the test of experience, and these will be made specialties. While catering to a more extended custom, the production of such cars is aimed specially at France, whither British purchasers of this grade of stock have always turned. It is hoped that the bulk of this trade can now be kept on the British Isles.

FORD RUNABOUT PRICE RAISED A HUNDRED.

DETROIT, MICH., Jan. 28.—The most startling recent development in the local trade is the announcement by the Ford Motor Co. of an advance in price of the popular $500 runabout. The same identical car will continue to be manufactured, but the public must pay an extra hundred for each of the runabouts sold in future. It is the $600 machine hereafter, and the wise ones of the row predict that even another advance before long would be no surprise.

The Ford people give as the reason for an advance in price, that materials have so increased in value that it would have been impossible to turn out a runabout of such class as the Ford, at the old figure, without great loss to the factory.

Mr. Ford is off on an extended visit to California, but Vice-president Couzens says that the raise has been quite beneficial to the factories trade. "We have been simply swamped with orders in the past few days," said he. "People who have been holding off, expecting to get a car on spring delivery at the old price have simply stampeded our way to get under the wire in time." This condition was anticipated by the Ford people, who held off making the announcement of the increase till the last moment.

The situation is interesting in view of the fact that another Detroit-made runabout is about to enter the field vacated by the Ford. The Brush runabout is to be a $500 one, at least such was the announcement. From all accounts the Brush looks a pretty good proposition for the money, and the action of the Ford may indeed give the new concern a firm foothold, if a car of the class of the famous four-cylinder runabout can be turned out for $500. The Brush will be shown for the first time at the Detroit show.

The report that the Winton Motor Carriage Company, of Cleveland, would open a sales branch in this city has been confirmed by Charles B. Shanks, sales manager for that company. A commodious and excellently equipped garage, such as the Winton maintains at the present time in New York, Boston, Philadelphia, Pittsburg, Cleveland, Chicago and London, will be seen here in the near future. The idea is to cater to Winton patronage, and assure satisfactory "up keep" of the Cleveland-made cars.

RATHER A UNIQUE GATHERING.

It is somewhat unusual to see any number of the Vanderbilt Cup race drivers together in any one place other than the course. The occasion depicted is that of the welcome extended to Wagner during his recent visit. He is shown sitting beside Elsie Janis, with Joe Tracy and Al Poole on the running board; Ralph Mongini forward; Walter Christie and George Robertson behind, and Vivet, Wagner's mechanic, at the rear wheel, the Simplex being the car used in the race scene on the stage.

ELSIE JANIS AND THE VANDERBILT CUP DRIVERS.

A MASSACHUSETTS TWO-PASSENGER RUNABOUT.

In bringing out its two-passenger runabout for 1907 it has been the aim of the Cameron Car Company, of Brockton, Mass., to produce a machine at once light, powerful for its weight, simple and not liable to mechanical derangement, durable and withal of very moderate cost. The result is an exceedingly smart runabout weighing but 900 pounds, but nevertheless carrying a four-cylinder motor that develops 16 horsepower at 1,000 revolutions a minute. The motor is air cooled, with the valves, all of which are mechanically operated, placed with their stems horizontal, the inlet valves on one side and the exhaust valves on the other. Long rocker arms extend from the crankcase, where their lower ends are acted upon by the cams, to the valves, which they actuate directly. These long rockers have the advantage of working without the long push-rods often used with overhead valve gear, and their length makes the movement on the pivots, which are attached to the cylinders by studs, very slight, insuring long wear. The spark plugs are screwed into the tops of the cylinder heads, and the timer is carried by a vertical shaft gear-driven from one of the camshafts, and is on the same level as the plugs, so that the wiring is short and direct.

But the most noteworthy feature of the car is the transmission. This was illustrated and described in THE AUTOMOBILE for November 8. Briefly, the entire transmission is mounted on the casing of the rear axle, which is of the live type, and is inclosed in an extension of the bevel gear and differential casing. The bevel pinion on the rear end of the propeller shaft meshes with a bevel gear on a short countershaft, and on this countershaft are three spur gears, of different sizes, which are adapted to mesh with a large spur gear carried on the differential casing. In changing from one speed to another the gears are not slid in and out of mesh, like ordinary sliding gears, but the countershaft is first moved away from the axle laterally, unmeshing the gears; then the gears are slid along until the proper one is in position and the lateral movement of the shaft is reversed, meshing the new combination. There are no more gears in mesh on the low speed than on the high. The reverse is obtained through an intermediate pinion. There are three forward speeds, the highest three to one, the intermediate four and a half to one, and the lowest seven to one.

Oak is used for the framing of the car and also of the body; the front axle is of I-beam section, and the rear axle of the type in which the wheels run on ball bearings on the ends of the tubes. Front wheels run on combination ball and babbitt bearings. Front and rear wheels are 28 inches in diameter, with 2 1-2-inch tires, in the regular equipment, but 3-inch tires will be fitted at an additional expense. With regular equipment, which includes oil side lamps, tail lamp, horn and tools, the price is $750; with the special equipment, including 3-inch tires, actylene searchlights and generator, and a removable sloping rear deck, the price is $850.

LYTLE AND THE PRESIDENT.

Herbert H. Lytle, the well-known driver of Pope-Toledos, was received at the White House by President Roosevelt this week (Monday). "The President was delighted," said Lytle, "and had me go into full detail about all the modern improvements installed in the 1907 Pope-Toledo. The President showed great interest in all the new features discussed and said that at his first convenience he would be glad to have me show him Washington by night in my 50-horsepower Pope-Toledo touring car. Even though his time is so completely taken up with important matters of State, he is far from being uninformed when it comes to mechanics, and I think he knows a car from bonnet to tail lamp."

"HANDS ACROSS THE SEA" IN AUTO SPORT.

A pleasant little exchange of felicitations recently took place between A. Darracq, the well-known French designer, and Henry Ford. M. Darracq was the recipient of a widely published interview with Mr. Ford, touching on the outcome of the Vanderbilt Cup race, in which the latter frankly stated the foreign car deserved to win, and, narrowing it down to the winner, praised the Darracq product. M. Darracq gave the article to the European journals for publication, and it was widely read and commented on in foreign trade circles. In acknowledgment of this courtesy on the part of Mr. Ford, M. Darracq writes his American confrère as follows:

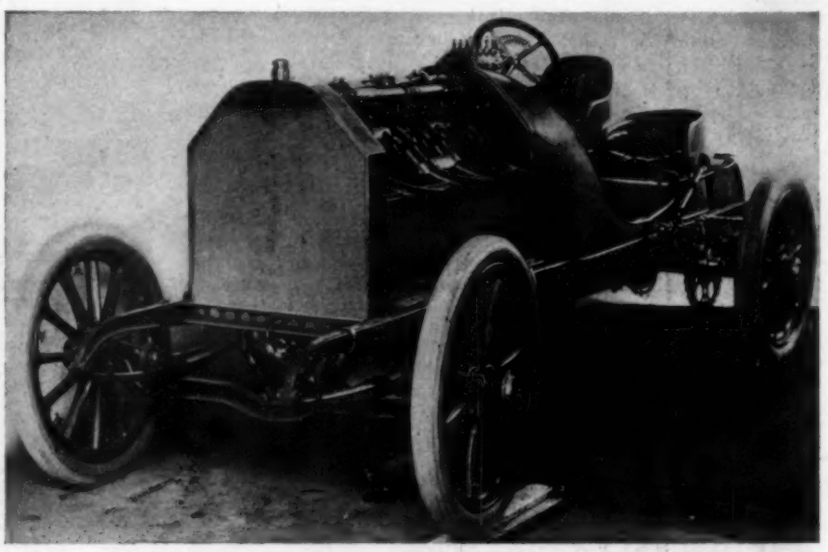
"I have been deeply touched at the congratulations which you have been good enough to extend me on the occasion of the victory of our car in the Vanderbilt Cup race. Your praise is the more appreciated, as it emanates from one whose reputation is well known in Europe. I wish to assure you that the delicacy of your sentiment is appreciated, and I wish to thank you with all my heart. French cars will doubtless again meet American cars in an international contest. I hope you will be represented and that the meeting will always be in a friendly and sportsmanlike spirit as in the past. I thank you again for your kind words, and send you in return my best wishes for the success of your cars for the season of 1907. Please accept, dear sir, the assurance of my most distinguished regards. (Signed) A. Darracq."

NEW MOTOR LAWS IN SWEDEN.

The new motor laws long threatened for Sweden came into force on New Year's Day, and, in the main, resolve themselves into a wholesale restriction of speed. Towns and villages may only be traversed at a maximum of 15 kilometers in daytime, while the country's limit is fixed at 25, but after dusk only 10 kilometers are permitted both in town and country. Only persons over 18 years of age may drive a car, and must possess an official license. In Stockholm whole streets are forbidden territory to cars, and it is generally recognized that the unskillful setting up of the new act will do a great deal of harm and little good.

TWO CUP RACERS ALREADY UNDER WAY.

PHILADELPHIA, Jan. 29.—There is now being constructed by Jos. Parkin & Son, of this city, a car which is to be entered in the elimination trials for the next Vanderbilt race. It has six cylinders and is rated at 120 horsepower. Howard M. Ambler, of the Bergdoll-Ambler Co., is also building a cup racer and announces that it will be on the road in April next.



ISOTTA FRASCHINI RACES SHOWN AT OLYMPIA LONDON SHOW.

NEWS AND TRADE MISCELLANY.

The Ciralsky building at 317 South St. Joseph street, South Bend, Ind., has been leased by the Tincher Motor Car Company, of Chicago.

Wing Brothers, proprietors of the American Automobile Company, of Tacoma, Wash., have moved into their modern concrete garage at 204-9 St. Helen's avenue.

Pierce & Isbell, the new agency for the Baker Electric Company, just opened at 1413 Michigan avenue, Chicago, announce that they will show five types at the coming Chicago automobile show.

R. E. Olds, president and general manager of the Reo Motor Car Company, of Lansing, accompanied by his wife, is now yachting about Florida waters on board his magnificent yacht the Reopastime.

A new garage is being built for the Reliable Automobile Company at Pacific avenue and Seventh street, Tacoma, Wash. Halstead House, a landmark, has been removed to make way for the improvement.

An organization has been formed in Brooklyn under the title of the Long Island Motor Trade Association. B. D. Underhill, of the Brooklyn Motor Supply Company, is active in the formation of the new body.

J. R. Thomas, the Maxwell agent in Washington, D. C., has leased for a term of years the large garage and salesroom at 1028 Connecticut avenue, and has removed from his former salesroom at 1319 L street, N. W.

A new make of automobile has been placed on the market by the Sinclair Scott Company, of Baltimore. The machine, to be known as the Maryland, has a 24-horsepower four-cylinder engine. Its selling price is $2,500.

During the week of the Chicago show the Rushmore Dynamo Works will install nine 18-inch electric navy searchlights on the roof of their Chicago store, 1328 Michigan avenue. The store is only one block from the armory.

For the first time the entire Pope plant at Hartford is being devoted to the production of Pope-Hartford machines. Overtime is being worked to keep up with the strong demand, and from eight to ten cars are being shipped every day.

Contract for the steel work for the big Maxwell-Briscoe automobile plant at Newcastle, Ind., has been let to the J. D. Smith Construction Company. The contract calls for 1,200 tons of structural steel work, and the cost will be $86,000.

Enlargements are being made by the Aetna Bottling and Stopper Company of their premises at 54 Peck street, Providence, R. I. The company has one of the the largest repair shops in the city, and has recently acquired the local agency for the Grout gasoline car.

J. C. Cook, of Long Beach and B. L. Brown have purchased the interests of C. H. Kay and Phil Dorland in the Electrical Construction Company at 1126-1130 South Main street, Los Angeles. All Pope-Waverley models will be handled, and electrical work undertaken.

A ten years' lease has been secured by the American Locomotive Company on the entire sixteenth floor in the proposed Cortland building of the Hudson Tunnel Company, at Church and Cortlandt streets. Floors in this structure will have 26,000 square feet of rentable space.

The Belle Isle Auto Company, Detroit, Mich., has secured a two-year franchise to operate an auto-'bus service across Belle Isle bridge and around Belle Isle. The fare will be 3 cents and 15 cents respectively. Four 18-passenger and three 36-passenger 'buses are being built at the Detroit machine shops.

These changes have been announced in the Jackson Auto Company, 312 W. Ninth street, Kansas City, Mo.: C. Boyd Richards retires as president, and is succeeded by W. A. Frank. Mr. Richards has sold his stock. F. L. Bumgardner is vice-president and treasurer. J. E. Halstead continues as secretary.

In printing the description of the new eight-cylinder Hewitt car, which appeared in the show issue of THE AUTOMOBILE, January 17, the price was given as $5,500. It should have been added that this was for the car with a limousine body, the selling price being $4,500 with a regulation touring body and equipment.

Application for a charter has been made to the Secretary of State by the Spartanburg Automobile Company, Spartanburg, S. C. The named capitalization of the company is $5,000, and its incorporaters are: Messrs. F. L. Bryant and Charles Parker. The proposed company will do a general automobile and supply business.

An interesting overland trip has been made by W. E. Kibbe, of Hartford, Conn., from Hartford to Ormond, Fla., in an 18-horsepower Columbia light touring car. Mr. Kibbe drove the car from Hartford to New York, and from there shipped it by boat to Jacksonville, Fla. From Jacksonville he drove overland to Ormond Beach, arriving just in time to see the opening races.

George H. Stout, of the Electrical Vehicle Company, expresses great satisfaction at the results obtained with the new Columbia multiple jet carbureter. The device really consists of two carbureters in one, designed to run the car to the greatest advantage at whatever speed is desired. The two work together, requiring no more adjustment or care than a single carbureter of earlier patterns.

Countess Hoyes, of Fuime, Hungary, has recently ordered a fully equipped 20-horsepower two-cylinder Maxwell car, which was shipped to her from Colonel Pardee's New York agency. Countess Hoyes is a granddaughter of Whitehead, of torpedo fame, and is accordingly an American by descent. This order is significant of the progress that the American automobile manufacturer is making in competition with the European makers.

Notwithstanding that it is only a year ago that the Lozier Motor Company took possession of their new four-story and basement building at the corner of Fifty-fifth street and Broadway, it has found it necessary to materially increase the facilities of its New York establishment. A lease has been taken on the entire third floor of the adjoining Pope building, which will give an increase of 7,000 square feet. A recent addition has been made to the works at Plattsburg, N. Y., in the form of a building 60 by 160 feet, increasing the assembling and testing facilities materially.

At the annual meeting of the H. H. Franklin Manufacturing Company the following directors were elected: H. H. Franklin, E. H. Dann, John Wilkinson, Giles H. Stilwell, Alexander T. Brown, W. C. Lipe and Frank A. Barton. Inspectors of election: H. W. Chapin and John G. Barker. The directors elected the following officers: H. H. Franklin, president; Giles H. Stilwell, vice-president; Frank A. Barton, secretary; H. Barton Webb, treasurer. Executive committee: H. H. Franklin, Giles H. Stilwell and John Wilkinson. The report showed that the company had its biggest year in 1906, with prospects for a trade this year that will exceed the capacity of the plant.

An unusual record has been established by a set of Goodrich tires attached to the Oldsmobile in which Ralph Owen, of Cleveland, and a party of friends recently made a trip from New York to Florida, with a total load, including passengers and baggage, of about 4,000 pounds. The route lay over all sorts of roads, some so bad that ox teams would not travel over them. Upon arriving at Jacksonville it was found that the wheel chains, which were new on leaving New York, were completely worn out. An examination of the tires, however, showed that they were still in excellent condition after their 1,500-mile trip. As there had been no serious punctures en route, the air with which they had been inflated in New York was still imprisoned in the tires on arriving in Florida.

A special meeting of the stockholders of the Selden Motor Vehicle Company was held recently to vote on a proposition to classify the capital stock of the company, amounting to $500,000, into preferred and common stock. The proposition was to divide the stock into 2,500 shares common, of the par value of $100 a share, and into 2,500 shares of preferred, of the par value of $100 a share. It was proposed to give the preferred stock a preference over the common stock in the assets of the company, and that the holders of such preferred stock shall be entitled out of surplus net profits to cumulative dividends not exceeding 7 per cent., in preference and priority to any dividends on the common stock. The entire proposition was carried. Building work on the East Rochester plant will be begun at a very early date.

A consolidation has been effected between the Correspondence School of Automobile Engineering, of Flatiron Building and 40 West Sixtieth street, and the New York School of Automobile Engineers, of 146 West Fifty-sixth street. Both concerns have been in existence on a substantial basis for over a year, the New York School of Automobile Engineers specializing resident instruction, while the Correspondence School devoted itself to the sort of business its name implies. As a result of the amalgamation a choice of either form of instruction or both in combination is made available. R. E. Olds, R. M. Owen and Robert H. Montgomery have transferred their interests. It is understood that Victor Lougheed will only remain long enough to put the consolidated concern on a satisfactory basis. In future the only address will be Fifty-sixth street.

NEW AGENCIES ESTABLISHED.

The Winton agency has been taken up by the Baltimore Motor Carriage Company.

Agencies for the Northern, Elmore and the Babcock Electric have been placed with the Mar-Del Automobile Company of Baltimore.

The Baltimore agency for the Wayne car has been secured by the Commercial Auto and Supply Company, at 862 North Howard street.

P. H. Greer, the Los Angeles agent for the Mitchell Company, has taken up the agency for the Marvel runabout, an $800 car built at Detroit.

At 251 Jefferson avenue, Detroit, the Motor Sales Company has opened a new store for the handling of De Luxe and Queen cars. The interests of the company are being looked after by O. R. Baldwin and H. S. Goudy, two well-known business men of Detroit.

A new agency is about to be opened in Pittsburgh for the sale of the Matheson car, made by the Singer Sewing Machine Company at Wilkes-Barre, Pa. The agency will probably be managed as a branch of the Central Automobile Company of Cleveland. Edward J. Schellentrager is identified with the Pittsburgh office.

PERSONAL TRADE MENTION.

C. F. Green has been appointed Michigan manager for Witherbee Igniter Company.

Robert J. Firestone has been appointed sales manager of the Firestone Tire and Rubber Company, with headquarters at Akron, Ohio.

The superintendent for Meteor Automobile Works, Davenport, Iowa, is now E. Huber, late of Huber Automobile Company, Mich.

Stanley Brooks has taken up the position of Michigan manager for the Continental Caoutchouc Company. Marcus Allen has succeeded him at the Automobile Equipment Company.

Having resigned his position with the Crawford Automobile Company, W. W. Taxis, of 1840 North Park avenue, Philadelphia, is open to take up a position either at factory or as manager or assistant manager of branch house.

P. E. Hawley has resigned from the office of president of the Automobile Equipment Company, 260 Jefferson avenue, Detroit, in order to devote his entire time to the interests of Brandenberg & Co., of which he is a partner.

J. M. Gilbert, general manager, and James L. Gibney, Philadelphia representative of the Continental Caoutchouc Company, have returned from Florida. Continental tires were well represented on the winning cars at Ormond last week.

Henry Ford is enjoying a midwinter holiday jaunt in California in one of his big six-cylinder cars. He is accompanied by Mrs. Ford, his 12-year old son, Master Edsel, and Mrs. Ford's parents. The party will tour California from San Francisco to San Diego, and will visit the Lick Observatory on Mount Hamilton.

Among the principal speakers at the first monthly dinner of the New York Advertising League, held at the Aldine Association, 111 Fifth avenue, New York City, Tuesday evening, was Robert L. Winkley, manager of the Publicity Department of the Pope Manufacturing Company. Mr. Winkley's talk was a subject of much favorable comment.

H. H. Thorp, formerly of Franklin Automobile Company, and later with the Aerocar concern, is now sales manager for Deere-Clark Motor Car Company, Moline, Ill. He has placed agencies with Atlas Automobile Company, 102 West 107th street, New York; Bond Brothers & Co., Boston; Wm. Gilmon, Philadelphia; Davenport Automobile Co., Davenport, Ia., and others.

The White Company, of Cleveland, announces that Albert R. Warner has been made secretary of that concern. Mr. Warner has for nearly two years been in charge of the various White agencies throughout the country. He will continue his old duties in addition to shouldering the responsibilities entailed by his new position. Mr. Warner is a graduate of Cornell University, and is well known in Cleveland business circles.

Arthur H. Robbins, formerly connected with the H. H. Franklin Motor Car Company, has succeeded Percy Owen as manager of the New York branch of the Aero Company. Mr. Robbins, who has been connected with the Ford and Pope companies, is planning an active campaign, and will undoubtedly increase the popularity of the Aerocar in the Eastern States. Mr. Owen recently withdrew to form the Percy Owen Motor Car Company in New York City.

NEW TRADE PUBLICATIONS.

Glide Automobiles, manufactured by the Bartholomew Company, Peoria, Ill., are described by text and engravings in an elegant catalogue produced by that firm.

Bouton Motor Company, 1675 Broadway, New York, give a brief description of Pullman cars in a recently issued folder. Their complete catalogue can be had upon request.

Smith & Mabley's new booklet "The Great Two," is a tasteful production descriptive of the well-known S. & M. Simplex cars. With it is an original souvenir postcard for those who have the postal habit.

All types of Waltham Orient automobiles are examined in general and in detail in the new catalogue of the Waltham Manufacturing Company, Waltham, Mass. Interesting particulars are given on what it costs to run a Buckboard.

Some idea of the extent to which long-distance coolers have been adopted will be gleaned from the Long Manufacturing Company's catalogue. Illustrations are given of the Long coolers fitted to a number of well-known cars and commercial vehicles.

"Stop Skidding" is a booklet describing Percy F. Megargel's trip across the Continent three times on Weed chain tire grips. It is interesting as descriptive of what an automobile can do, and incidentally points out the advantages of Weed Chain Grips.

"Sparks for Motor Ignition" is the title under which the Semi-Dry Battery Company, Newark, N. J., presents useful information on electric appliances for automobiles. The man who wishes to be complete master of his automobile should obtain this pamphlet.

Archer & Co.'s new catalogue is an attractive booklet describing the automobiles built in the famous gun factory. It describes the Hotchkiss car in a way that is interesting to everybody, and with an interesting introduction by George Dupuy. The pamphlet is really worth reading. The printing and decorations are excellent.

The automobilist who contemplates a tour in France should secure a copy of "Automobile Formalities in France," distributed by Archer & Co., American agents for the Hotchkiss car. It is an elegantly produced booklet, compiled by the parent firm, and gives just the information the foreign autoist should have on how to secure a driving license and attend to other formalities in France.

"Touring Abroad" is an interesting little pamphlet put out by Smith & Mabley, Inc., and descriptive of touring in foreign lands as conducted by that firm's new European touring department. The new idea in touring Europe is that this well-known concern will provide a 30-horsepower Simplex touring car, seating six persons and chauffeur, for trips on the Continent. Smith & Mabley assume all responsibilities and attend to all annoyances of securing licenses, customs affairs, etc. A two-month's trip of 6,000 miles through France, Germany, Spain and Italy is planned.

One of the most luxurious and elegantly produced catalogues ever devoted to the automobile is just to hand from the Locomobile Company of America, Bridgeport, Conn. Produced in a chaste style in black and red, with numerous half-tone engravings, the whole is a masterpiece of the typographical art, and a book which will be turned over with interest by all, whether interested in automobiles or not. By text and cuts the various parts of the chassis are presented to the reader. Then follow scenes from the Vanderbilt Cup race, in which the Locomobile made such a good showing, half a dozen pages of illustrations show the Loco. touring in different parts of America or taking part in endurance contests; the next page and the reader is following the Loco. over Normandy's perfect roads and amid Scotland's wild beauty; still a little further and the Loco. is in France's chateau district, near the blue waters of the Mediterranean, and under Italy's azure skies. Another page and the car is on the streets of Brooklyn and New York. Those who have not seen the catalogue ought to see it; those who have will keep it.

RECENT INCORPORATIONS.

International Auto Company, El Paso; capital stock, $10,000. Incorporators, Julius A. Krakauer, Charles M. Barber, of El Paso; Juan M. Salazer, of Chihuahua, Mex.

Iron City Automobile Company, Pittsburg, Pa.; to manufacture, sell, repair, lease and store automobiles. Incorporators, J. J. Seelar, John Weaver and P. S. Chambers.

Silver Lake Park Company, Atlanta, Ga.; to establish a club and resort for automobilists; capital stock, $100,000. Incorporators, C. H. Ashford, E. C. Thrash, James R. Gray, William Owens, Hoke Smith, B. M. Blount, H. C. Bagley, M. F. Amorous, H. C. Stockdell, W. C. Caldwell, A. W. Farlinger, T. B. Lumpkin, E. Rivers, H. C. Ashford and Robert L. Berner.

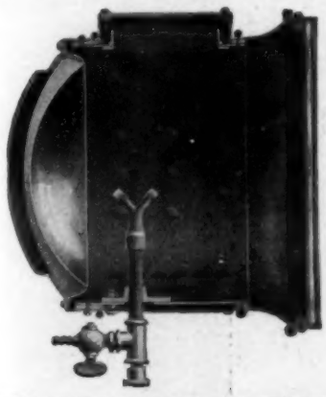
INFORMATION FOR AUTO USERS.

French Socket Wrenches. — Socket wrenches in sets of six, eight and ten sockets of different sizes respectively are being imported from France by the Motor Car Equipment Company, 55 Warren street, New York. In one style the socket pieces are straight with two hexagonal sockets of different size, one at

HANDY IMPORTED WRENCHES.

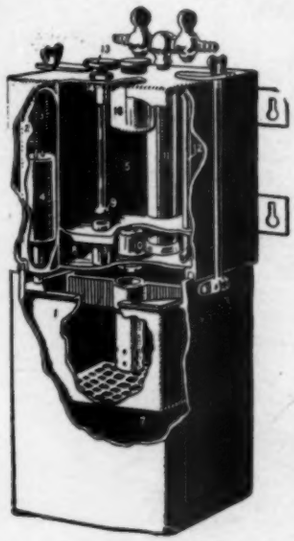
either end, and in the other set the socket pieces are bent at a right angle to facilitate working in awkward corners. The socket pieces are made of well-tempered steel tubing, and are bored transversely near the middle to receive a small, straight steel handle for turning the wrenches. This handle is formed into a punch at one end, and at the other is upset to prevent the head pulling out of the socket hole.

Rushmore Searchlights.—For the past seven years Rushmore lamps have been produced without any material change in their construction, and that they still



THE 1907 RUSHMORE SEARCHLIGHT.

maintain their position is shown by the extraordinary number of car manufacturers who make it their regular equipment. The special feature of these lamps is the extremely short focal length of the lens mirrors, by reason of which the burner can be placed very close to the front edge of the mirror, thus permitting the latter to utilize the maximum percentage of light. On account of its proximity to the burner, the

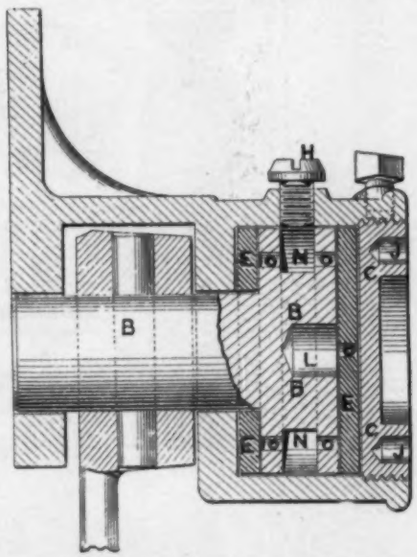


SKELETON VIEW RUSHMORE GENERATOR.

lens mirror is made of the toughest annealed lead glass, which stands the heat, and whose index of refraction is higher than that of the window glass commonly used. The Rushmore generator differs from others in having an independent movement to shake the carbide basket. As is well known, when the carbide basket is rigid with the generator a large portion of the dust fails to shake through, with the result that the lime blankets the carbide. This is prevented in the Rushmore by hanging the basket from opposite corners and suspending a lead weight by a spring over one of the free corners. The automatic water feed is controlled solely by the gas pressure.

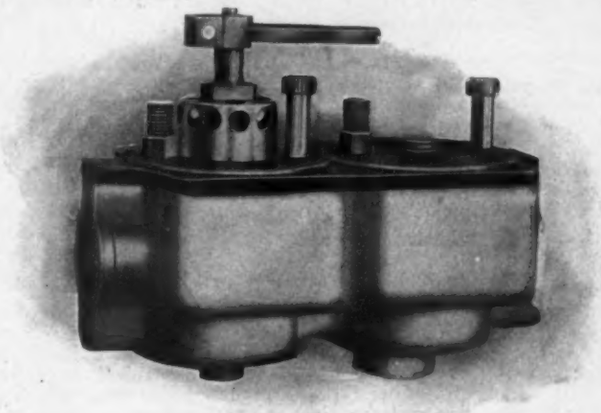
Ever Ready Carbureter.—The distinguishing feature of this instrument is the combination of two carbureters in one. One carbureter is connected with a small brass tank filled with volatile naphtha, and is used solely for starting. The other is thrown into operation as soon as the engine has warmed up, and is then capable of running on any kind of fuel, irrespective of whether it is low-grade gasoline, kerosene or alcohol. Another feature is that it promptly starts the engine in any kind of weather, whether it is zero, wet, foggy or dry. The Auto Improvement Company, 316 Hudson street, New York City, is marketing this interesting article.

Diezemann Shock Absorber.—The value of a well constructed shock absorber no longer needs to be pleaded. By adopting it as a standard equipment of their machines some of the world's best automobile manufacturers have given public testimony to its value in securing easier riding at higher speeds and decreasing the strain put upon engine and other mechanical parts. The Diezemann shock absorber, manufactured by the company of the same name at 1311 Hudson street, Hoboken, N. J.,



SECTION OF DIEZEMANN SHOCK ABSORBER.

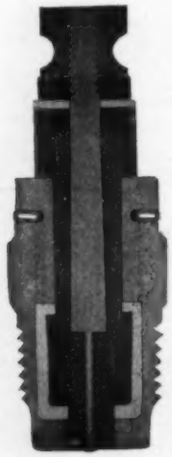
is well known to the American public. In 1907 two sets will be constructed, one for cars over 1,800 pounds, the other for cars under this weight. The only structural change is that the bronze case is made heavier to resist torsional strain, and the grease reservoirs in the steel spindles are being made larger. Briefly, the Diezemann shock absorber



EXTERIOR VIEW, NEW EVER-READY CARBURETER.

consists of a bronze casing containing fiber friction discs and a steel friction spindle bolted to the side member of the chassis, the friction discs being packed in grease and by means of a screw plug may be adjusted to yield the desired resistance. A copper seated set screw holds the adjusting plug in position, and a lever joins it up to a connecting link pivotally secured to a plate mounted upon the vehicle, axle or spring. All friction surfaces are packed in grease and are absolutely dust-proof.

An Improved Spark Plug.—To overcome one of the common defects of spark plugs, short circuiting due to a deposit of carbon, the Splitdorf plug has been devised. Its feature is the longest insulating surface possible without increasing the size of the plug in any way. A mica bushing is formed on a taper consisting of lateral windings of mica, composed of sheets, the full length



SPLITDORF IMPROVED SPARK PLUG.

of the insulator. This mica bushing is inserted into a small bushing or nut, and is forced to a solid formation by the central electrode. The mica bushing is so extended as to create an insulating surface of one inch. Outside of this a porcelain insulator is used, which increases the insulating surface to one and three-quarter inches in length. In addition to their greater length, the insulated parts are so designed as to break up the carbon deposit. Another desirable feature is the small amount of gas space inside the plug, thus preventing excessive heating. The plug is handled by C. F. Splitdorf, 17-27 Vandewater street, New York.

Automobile Tops.—At this season of the year some protection against rain, snow and hail is absolutely essential if automobiling has to retain its charms. The open touring car has manifest advantages over the heavy closed vehicle, providing it has some kind of protection against winter storms. The complete line of tops built by the Vehicle Top and Supply Company, St. Louis, are calculated to supply this need. Lightness, strength and graceful lines are all combined in this series, which include simple extension tops, runabout tops, full and three-quarter backs, fastened either by rear joints or front straps. Interesting features are front and side roll curtains by the use of which an open body can be entirely inclosed.

Imported French Rims.—Clincher rims that are different in some important particulars from those of domestic manufacture are being introduced in this country by the National Sales Corporation, and sold in New York as one of its specialties by the Motor Car Equip-

PEUGEOT CLINCHER RIMS FOR 1907.

ment Company of 55 Warren Street. Aside from the special quality of the metal used by the well-known firm of Peugeot Frères, the chief difference noticed in the French rims made by them is the saving of weight with no sacrifice of strength by the simple means of making the rim thin where it is supported from below by the wheel felloe, and increasing the thickness at the edges where strength is needed to hold the beads of the tire and to withstand occasional contact with stones, car tracks, curbs, etc. The edges are well rounded and smoothed off to prevent chafing of the sides of the tire, while the gradual thinning down of the metal from the edges to the base of the rim reflect the careful designing that is so noticeable in all parts of the best French automobiles and their fittings.

Improved Turntables. — Among the season's novelties in automobile sundries is a new and improved model of the Weber Turntables. The previous model looked like a pair of huge roller skates joined together by metal stirrups on which rested the tire of the automobile wheel. In the new model the tire rests in a trough-shaped steel casting mounted on three pairs of cast iron rollers pivoted like casters, one pair at the front and two pair at the rear. At the front end of the trough-shaped casting is an incline up which the wheel of the car will roll easily. The over-all measurements of the turntable are 28 inches in length and 16 inches in width, and the casting is large enough to take any size of tire. The turntable is amply strong to carry

WEBER TURNTABLES FOR GARAGE USE.

the weight of the heaviest touring car. A set of them is used under the rear wheels of a car to facilitate handling in a garage. The retail price is $20 per set. The agency for them is held by the Motor Car Equipment Company, 55 Warren street, New York City.

A Few Facts About Asbestos.—One of nature's most wonderful and unique products is asbestos, a material, which, in spite of its extensive use, is comparatively unknown to the general public. Prior to 1850 it was looked upon principally as a curiosity, although Charlemagne (Roman Emperor from 800 to 814 A. D.) is said to have had a tablecloth made of asbestos, which he cleaned by throwing into fire.

There are two varieties of commercial asbestos, known as Amphibole and Chrysotile. The former is used only to a comparatively small extent, as the fibers are short and without tensile strength, and are, therefore, not suitable for manufacturing many of the asbestos products. Amphibole is used to some extent in cements, but is not well adapted even for that purpose. Chrysotile, on the other hand, has a strong and silky fibre, which adapts it for such materials as asbestos fabrics, household utensils, theatre curtains, clothing for firemen, etc.

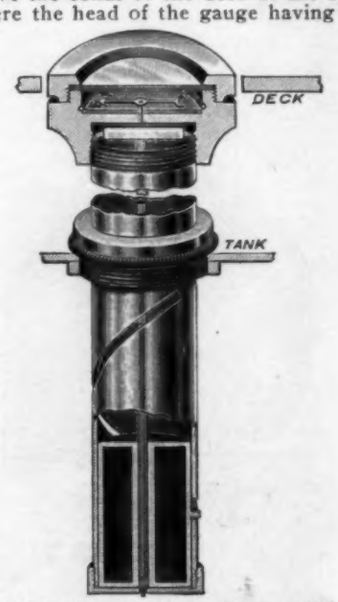
In Germany asbestos is known as steinflachs (stone flax), and the miners of Quebec give it quite as expressive a name—pierre coton (cotton stone).

Asbestos is mined in open pits, similar to stone quarries, and although it is found in all parts of the world, the mines in Quebec, Canada, are the most famous, yielding about 85 per cent. of the world's supply of chrysotile. Probably the largest of these mines is that owned by the H. W. Johns-Manville Company, of New York. In 1879 the output of the Quebec mines was 300 tons, which has steadily increased year by year to 50,000 tons in 1905.

Gasoline Gages.—The Triumph Gasoline Gages, manufactured by the Boston Auto Gage Company, Boston, are designed specially for both automobile and motor boat tanks. The gage is magnetically controlled by a metallic

TRIUMPH JR. HANDY GASOLINE GAGE.

float, and may be connected with the top of a tank. The intermediate collar on the tube, shown on illustration, is screwed into a bushing connected with the top of the tank, and the gage tube is extended above the collar to the deck of the boat, where the head of the gauge having the



FLUSH DECK GAGE FOR MOTOR BOATS.

pointer will be protected by the usual deckplate. Lifting the lid of the deckplate shows the pointer that indicates the amount of gasoline in the tank. All gages are made of rustless material.